This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

3800 MILES ACROSS CANADA

Can 1509.00.4

Harvard College Library

FROM THE
FRANCIS PARKMAN
MEMORIAL FUND
FOR
CANADIAN HISTORY
ESTABLISHED IN 1908

BANFF HOTEL AND BOW RIVER VALLEY IN THE ROCKY MOUNTAINS.

3800 Miles Across Canada

BY

J. W. C. HALDANE, C.E.,

M.INST.MECH.E.

Author of

VARIOUS LIME-LIGHT LECTURES ON CANADA, AND OTHER SUBJECTS

ENLARGED EDITION

ILLUSTRATED

LONDON:

SIMPKIN, MARSHALL, HAMILTON, KENT & CO. LTD.

1908

Can 1509.00.4

HARVARD COLLEGE
MAR 29 1918
LIBRARY

Francis Parkman Fund

To

THE RIGHT HON. THE

EARL OF ABERDEEN, G.C.M.G., LL.D., D.C.L.,

ETC., ETC.,

LATE GOVERNOR-GENERAL OF CANADA,

THIS RECORD OF A TOUR,

THE INTEREST OF WHICH WAS MUCH INCREASED

BY HIS KINDLY RENDERED ASSISTANCE, IS

Respectfully Dedicated

BY

THE AUTHOR.

PREFACE.

THE manner in which my works on Engineering, referred to at the end of this volume, have been received by all classes of readers at home and abroad, has encouraged me to prepare another, entitled *3,800 miles across Canada*, which is written in a popular and attractive style throughout. To enable me to attain this desirable object, I recently traversed that country to Vancouver Island, remaining for various periods at the numerous places of interest referred to in the following pages.

During my visit to the Dominion, I gathered as much special information as possible regarding its immense field for the industrious and enterprising; its boundless resources for trade and commerce; its steamship connections with Japan, China, Australia, the British Isles, and other parts of the world; its people; its scenery; its engineering features; incidents of travel, and, indeed, everything else from every point of view which could help to make this volume useful and interesting to readers.

As I had the honour of making the tour under the kind auspices of the Governor-General—Lord Aberdeen—and other influential people in Canada, every source of trustworthy knowledge was thrown open to me, of which I fully availed myself. From his late

Excellency I have also had the honour of receiving the following letter for publication :—

LONDON, W., *April 5th*, 1899.

J. W. C. HALDANE, Esq.,

MY DEAR SIR,

As you are good enough to purpose to dedicate your book on Canada to myself, I beg to offer my assent to your obliging proposition.

Having been officially resident in Canada, and having had the opportunity of meeting you during your tour in that country, I am personally aware of the extent and comprehensiveness of your travels, which will doubtless have given you ample opportunity for collecting a large mass of information, which will, I hope, be perused by many readers with interest and advantage.

Believe me,

Very truly yours,

ABERDEEN.

Those just referred to, and many others as well, who generously aided me in my enterprise, have been mentioned in detail throughout this volume.

It may be added that I was for many years employed, firstly, as an apprentice in the works of the North British Railway Company, and Messrs. Denny Brothers of Dumbarton, and, subsequently, on the staff of Messrs. Neilson & Co., and Tod & McGregor of Glasgow, and, lastly, of Messrs. Laird Brothers of Birkenhead. In 1873, I commenced business as a consulting engineer in general practice in Liverpool, and, as I have not only written professional books which have received the highest appreciation of the press and of the public, but am also the author of

several equally esteemed lectures which are described at the end, I have reason to hope that this new treatise will meet with a similarly kind reception.

The plates have been taken from the choicest photographs, and the folding map is the latest and most complete production I could obtain.

It may further be stated that I have written in freehand, unconventional, and simple style, trusting that much which might otherwise prove uninteresting to many may thus be somewhat enlivened. Finally, I have throughout the book adopted, when appropriate, the terms "Happy Traveller," and "Chiel," with the object of avoiding as much as possible the phrases "I did this," and "we did that," for obvious reasons.

J. W. C. H.

30 North John Street,
Liverpool, *December*, 1899.

CONTENTS.

CHAPTER I.

PAGE

QUEBEC AND ITS NEIGHBOURHOOD.—How the Author's Information was obtained—Various Classes of People interviewed—Their diversified Opinions—The Author as the "*Happy Traveller*"—His own treatment of People and Things—Liverpool to Quebec—Felicities of the Voyage—Sights and Scenes of Quebec—Wonderful Saguenay Chasm—How caused—Quebec Province—A curious Ship-launching Story of 1750—Quebec City, the Originator of Atlantic Steam Navigation—Cunard Brothers' Share in the Undertaking—*Royal William* from Quebec to London, 1833—Her Career as a Spanish War Steamer—Origin of Cunard Company, 1840—Steam Navigation of to-day 1

CHAPTER II.

MONTREAL AND ITS SURROUNDINGS.—Jacques Cartier, the Columbus of Canada—Origin of the Name—Champlain, its Benefactor—Maisonneuve, the Founder of Montreal—Topography of the City—Some of its prominent People—A former Governor-General and his mistaken Guest—Origin of McGill University—Its first Principal—Subsequent Career—Dean Bovey—His New Engineering and Physics Buildings—Wonderful success of the University—How the "Happy Traveller" was Interviewed—Montreal and its Public Buildings—Electrical Tramcars and their Peculiarities—River St. Lawrence—Its Leading Objects of Interest—A great River Steamer 17

CHAPTER III.

CANADA, AND ITS TRAVELLING RESOURCES.—Dimensions of the Country—Its Division into Provinces—Canada as it

was—Two Methods of originating a Railway—Origin of the Canadian Pacific Railway—Explorations and Surveys of the Country—Wonderful Rapidity of Construction—Laying the last Rail—Immediate Results—Course of the Line across the country—Other means of Travel by Land and Water—Montreal, Ottawa, and Georgian Bay Canal—Its object—General Plan—Enormous Lake Traffic—Commercial Advantages of the New and Direct Route to the Sea—Subsidiary Advantages—Engineering Features of the Canal—Opinions of eminent Canadians regarding its value 36

CHAPTER IV.

WESTWARD BOUND.—Montreal to Ottawa—History of the City—Its Parliamentary and other Public Buildings—Chaudière Falls—A Railway and Steamboat Centre—Its chief Industries — Unique Wood Pulp Paper, etc., Works — Their River Motive Power—Gigantic Saw Mills — Their Peculiarities — Hints about Travelling Trunks — Summer Costume — On the road to Fort William—Aspect of the Country—A Sleeping Car—Arrangement and Method of Working—Courtesies of the Car—Heading for Lake Superior—Lovely Surroundings—"Striking" the Lake—Charms of Mountain and Sea and Sky—The Belles of Schreiber—"The *Chiel*" amongst them—Shades of Night again—Arrival at Fort William 50

CHAPTER V.

PROVINCE OF ONTARIO. — Its Immense Proportions — Geographical Position—Vast Water Transportation Resources — Peculiarities of the Province — The Great Lakes—Early days in Northern Ontario—Its Physical Features and Resources—Marvels of the Minor Lakes—A Gold-Mine Story—A new Era for the District—Difficulties and Triumphs of the Early Colonists—Qualities necessary to obtain Success—Opinions of Settlers—Southern Ontario—Guelph Agricultural College—Its Immense Advantages—Experimental Farms and their

Uses—Farming an advanced Practical Science—Timber Industry—The Trees of Canada—Bee-Hive Hamilton—Fruit Growing on a Gigantic Scale—Bush Fires—Their Causes—Government Protection of Forests 65

CHAPTER VI.

ONTARIO FURTHER CONSIDERED.—Fort William—Grain Elevators—C. P. R. Lake Route—"Central Time"—Twenty-four hour System—Good Friends in the Train—Rat Portage—Glacial effects on the Land—Wondrous Lake of the Woods—Its innumerable Islands—Country honey-combed with Lakes and Waterways—Prosperity of the District—Immense Water Power for general Purposes—How obtained—Action of Turbines—Great Hydraulic Installations at Lachine and Chamblis—Lake of the Woods Flour Milling Works—Gold Reduction Works—Gold Mining of the District—Its great Future—Boat and Canoe Transportation—The Muskoka Region 79

CHAPTER VII.

PROVINCE OF MANITOBA.—Rat Portage crowds for Winnipeg Exhibition—Curious Difficulty—Entrance to the great Prairie—"Western Canada"—Its Extent and Resources—Grain producing Powers—Climate—Systematic Division of the Land—Manitoba and its Peculiarities—Rapid increase of Population—The Prairie for 800 miles—An Ancient Lake, the cause of its great Fertility—Mistaken ideas concerning the Province—As it is in Winter and Spring—Its great popularity—Winnipeg during the Exhibition—Another unexpected Difficulty—"Give you a *Cot* with 20 others, Sir?"—Did better—Origin of Winnipeg—Rapid Extension—Great Future—How some Cities have grown 95

CHAPTER VIII.

A TRANS-CONTINENTAL C. P. R. TRAIN POPULARLY CONSIDERED.—Railway Works at Winnipeg—Rolling Stock Practice—Composition of a Mail Train—Peculiarities of the Locomotive—The Spark-Arrester—Cow-Catcher

Incidents—The Tender—Baggage Car—Colonist Car—Tourist Car—First-Class Car—Irish Amateur Signalman — European and Trans-Atlantic Systems compared—New System of Electric Train Lighting—Train Officials—The Conductor—Brakesman—Dining Saloon Staff—Sleeping Car Attendants—Engine Driver and Fireman—"Hell-Fire Tom"—How two frightful Accidents were averted—The *Safest* Occupation 109

CHAPTER IX.

WINNIPEG OF THE PRESENT AND FUTURE. Winnipeg as a City—Its Public Buildings, &c.—A Government Centre—The Chicago of Canada—Heavy Tramcar Trains—Exhibition and its Visitors—Enterprise of the People—Prairie Children's First Visit to a City—The Australian Bush-reared Author's similar experience—Cause of Winnipeg's Prosperity—How the C. P. R. enriched a Desert — Eventful Career of Winnipeg — The famous "Boom"—Crashes—Speculative Extortioners—Primitive means of Transport—The Wilderness of the Past—Flatness of the Country—Embellishment of Winnipeg—"Main Street" of the Future—The Love of the Beautiful—Mosquitoes on the Red River—Their sting Scientifically considered—Prevention better than Cure 123

CHAPTER X.

THE RESOURCES OF CANADA FOR THE INDUSTRIOUS AND ENTERPRISING.—Reminiscences of the Archbishop of Rupert's Land—"Canada should be better known at Home"—Business Life in the Old Country—Manual Arts of To-day—Value of Workshop Training—Lord Dashe as a Smith—The Shipbuilding Marquis—Advantages of Practical Knowledge in the Colonies—How "Practical Hands" succeed as Farmers — A Successful Farmer's Story—Valuable Lessons for all—Opinions of others we met—Secrets of Success in Canada—How the Government helps Settlers—How the C. P. R. aids them—Misunderstandings regarding the Climate—Hints for the Enterprising—New Life on New Lines 137

CHAPTER XI.

SIGHTS AND SCENES OF THE PRAIRIE.—The People of the Dominion from a British point of view—Two Victorian Ladies we met at Sea—"An Out of the World Locality?" — *Enlightenment* — The Bush-bred Author at Ten—"A Hottentot!"—Canadian Ladies socially considered—Effect of the Jubilee Year—Peculiarities of the Prairie—Farming on the Prairie—Prosperity of Brandon and adjacent Towns—Great Prairie Steppes—Prairie Fires—Lord Brassey's Farm at Indian Head—Regina, the N. W. T. Seat of Government — Moose Jaw—Mixed Farming on a gigantic Scale—One Hundred Miles without a Tree—Indian Tribes along the Line — Medicine Hat — Branch Line to the Mining Regions — Rockies in sight, 100 miles off — Arrival in Calgary 151

CHAPTER XII.

CANADIAN SOCIETY.—Commencing a Farm on the Prairie—How to Keep ever Young and Hearty and Happy—Canadians we met — Old Country Misconceptions of them—Prairie Society—Manitoban Lady's Letter to the Author—"The Sons, Nephews, Nieces, and Cousins of Earls almost innumerable around us"—"Aristocratic Ladies at the Wash-tub"—Our Experiences of Prairie Ladies—Highland Clans well to the Fore—Winter and its Amusements—Bullock Car Party—"Honourables" in the Laundry and Smithy, &c. — Old Country Refinements — Prairie Residences—How constructed—Furnished—Household Supplies—Work on the Farm—Simple Methods of obtaining Water — Advantages of Good Irrigation—Hard and Soft Water practically considered—Incidents from Anglo-Canadian Life..... 166

CHAPTER XIII.

CALGARY, ALBERTA—OFF TO THE MOUNTAINS.—Curious Effect of clear Air—Calgary a Trade Main Centre—Extent of the Mountain Ranges—How Formed—Approach to the

Rockies—Magnificent Transformation Scene—Effect upon Visitors—Bow River—Lady Macdonald in the Rockies—Banff and its Hotel—Chief Points of Interest—National Park and its Attractions—Society at Banff—Westward Ho!—Lovely Morning Effects—A Sea of Vast Mountains—On the Summit—A divided Stream—Kicking Horse Pass—Rendings of the Rockies—Effects of Natural Forces—Entrance to British Columbia—Breakfast at Field, at the Foot of the Pass.. 180

CHAPTER XIV.

BRITISH COLUMBIA.—Clever Masterstroke of Policy—How it affected the C. P. R.—Peculiarities of the Province—Extraordinary Developments—Its Great Rivers—Lakes—Cities—Climate—Scenery—Precipice Lines of the C. P. R.—How Protected from Danger—Heading for Columbia River Valley—Through the Valley to Donald—Planning of a Railway through the Mountains—"Big Bend" of the Columbia—Entrance to the Selkirks—Devil's Bridge—Bear Creek—"Where are yer Grizzlies?"—A Giant Incline—Great Gorges—Sublimities of the Selkirks—Wondrous Scenic Effects—The Summit—Extraordinary Snowfalls—Their Cause—Colossal Avalanches—Snow Sheds—"Sir Donald" and other Peaks—Dinner at Glacier House 197

CHAPTER XV.

END OF THE SELKIRKS—KOOTENAY GOLD REGION.—The Great Glacier—Curious Convolutions of the Line—Albert Cañon—Vast Mountains and Gorges again—Revelstoke—Vice-regal Cars at Station—Luxury of Transatlantic Travel—Off to the Kootenay Region—The lost 18,000 Mile Season Ticket—Fine Fix!—What next?—Arrowhead—Down the Lakes to Robson—Vice-regal Party returning—Lovely Lake Scenery—Robson to Rossland—The Mountain City—Its Gold Mines—Their Prosperity—Reception of their Excellencies—Authoritative Opinions of the District—The Episcopal Church—Nelson, another Mining Centre—Slocan River and

Lake—Stern Wheel Steamer—Skirting a Colossal Precipice—A Mountain Tragedy—Silver Mine City of Sandon—Return to Revelstoke—Recent Innovations 215

CHAPTER XVI.

MOUNTAIN FEATURES OF CANADIAN PACIFIC RAILWAY—MORE PECULIARITIES OF B.C.—Fascinations of the Line—Its Construction—Unexpected Difficulties—Colossal Trestle, &c., Bridges — Crossing an awful Chasm — Curious aspects of Pile-driving—Mountain Railway Experiences—Crossing the Selkirks—Difficult Surveys—Snow Shed Protection—Gigantic Avalanches—Their Cyclonic Disturbances—Methods of Guarding the Line—Rivers in Flood—Wonderful Engineering Performances—Eagle Pass of the Gold Range—*Last Spike* of the C.P.R.—Shuswap Lake—Sicamous—A London Solicitor's Enterprise—Off to Vernon—Lord Aberdeen's Fruit, Hop, &c., Ranch — Their Excellencies at Home — Manager's opinion of the Farm—Great Capabilities of B.C.—Its Exquisite Beauties..... 230

CHAPTER XVII.

THROUGH THE CAÑONS, ETC., TO VANCOUVER.—Glorious Sunset Views—Skirting Shuswap Lake—Thompson River and Cañon—Breakfast at North Bend—Fraser Cañon—Appalling Scenes—The Turbulent River—"Hell Gate"—Flood Rise of 70 Feet—B.C. of the Past—Sir James Douglas—Cariboo Road—Yale—Gold Discoveries—How the C.P.R. has affected the Province — The Cañons Past — Full Speed Ahead — Diverging Coast Range Mountains—Rich and Lovely Plain—Striking Burrard Inlet—Vancouver at Last—Forest in 1885—City in 1886—C.P.R. Ocean Mail Steamers—By R.M.S. *Empress of India* to Victoria — Her Description — Chinese Stewards — Their Full Dress Costume — Matchless Beauties of Straits of Georgia—Arrival at Victoria 244

CHAPTER XVIII.

VANCOUVER ISLAND AND ITS PEOPLE.—Victoria, the capital of

British Columbia — Its Origin and Development — Its Trade on Land and Sea—Popular Resort—Esquimalt—New Parliament Buildings of Victoria — Residential Parts of the City—Its Public Buildings—Social Aspects of the Victorians — A Ladies' Lawn Tennis Tournament—Their Style of Dress—Jealous of Vancouver—Why? — Useful Hints — An Awful Fire — Curious Results—Electric Speed Fire Engine System—Chinese Residents—Board of Trade Notes—Prosperity of the Province — A Delightful Visit — American Ladies — Character Sketch of them—Through Puget Sound to Seattle and Tacoma — Train Ferry Boat on the Columbia—Similar Colossal Systems—Portland and its Environs—Vancouver again 263

CHAPTER XIX.

FROM WEST TO EAST.—B.C. in Smoke—Burning of Vancouver in 1886 — Awful Scenes — Swift Re-construction and Extension—New Westminster and its Industries—Its Destruction by Fire in 1898—Canadian Sea Connections with the British Isles — C.P.R. "Around the World" Tours — More than Himalayan Scenery of the Pacific Bed — A Cyclopean Submarine Valley — Alternative Trans-Continental Routes — Return Trip from Vancouver — Across the Mountains to Glacier House and Golden—Fifty miles on a Cow Catcher through the Rockies—Kicking Horse Cañon under Evening Shades—Glorious Experiences—Line Hands at Work—On the Prairie Eastward bound—Victoria to Montreal Surprise Party in the Train—Moose Jaw again—Heading for Portal—Curious Incidents on the Line—An International Boundary Experience—Arrival in Minneapolis .. 283

CHAPTER XX.

A TOUR THROUGH THE UNITED STATES.—The Twin Cities of Minneapolis and St. Paul—Origin of the Former—Its Industries — General Appearance — Fine Buildings — Tram lines—Mills, etc.—Beautiful Suburban Embellishments—Their Practical Results—Chicago, the Prairie

City — Its Streets — Sky-scraping Edifices — Masonic Temple—Strange Request of the United States Government—Pullman Car-building Works—Their Vast Extent and Magnificence—City of Pullman—How the Car was Sprung upon the World—Pullman Works, Interiors—The "Noon Day Rest" in Chicago—A Palatial Avenue—Lifting a City Bodily—Great Fire of Chicago—Vast Hotels—Their Regal Splendour—Departure for Detroit—The City of the Straits—A Retrospect of Mining Life in British Columbia 297

CHAPTER XXI.

THE EASTERN PROVINCES AGAIN.—Crossing into Canada at Detroit — Toronto and its Surroundings — Niagara Falls—Their Curious Origin—How the "Great Gorge" was Formed—Opinions of Scientists—Varied Retrocession of the Falls—The New Railway Bridge—Peculiarities of the Falls and River—Means of Access—Disasters Past and Present—Electrically-driven Works—Lady who "*Owned the Falls*"—How their Attractions were Developed—Hamilton—Its Prosperity—The Thousand Isles—How to See Them—Montreal Again—Mrs. Birt's Distributing Home for Boys and Girls at Knowlton, P.Q. — Its Great Success — The Maritime Provinces — Nova Scotia — New Brunswick — Prince Edward Island—Newfoundland 316

CHAPTER XXII.

CONCLUDING REMARKS.—Hints for Ladies—The Employment Problem of To-day—How a New Law affects it—Ladies as they Were and as they Are—Women's Official Occupations and their Effects on the Men — A Curious Incident and its Results — British and Canadian Employment Prospects of the Present compared — Mrs Birt's Authoritative Statements regarding the Latter—New Lines of Thought for Everyone — The Author's Professional Experiences—Commencing Private Practice — Apparently Overwhelming Obstacles — Success

at last — A Time of Difficulty again — How it was weathered — His Initial Movements in Canada — Results—Popular Errors—Latest Facts from the Far West—Last day in the Dominion—Vice-Regal Reception at Quebec—At Sea—Home again—Arms of the Dominion and the Provinces explained..... 333

LIST OF PLATES.

	PAGE.
Banff Hotel and Bow River Valley .. .. .. *Frontispiece.*	
Chateau Frontenac and Dufferin Terrace, Quebec	7
Lower Town of Quebec, and Point Levis from the Chateau	9
Capes "Eternity" and "Trinity," on River Saguenay ..	11
Surf Bathing at Little Metis, on the St. Lawrence	13
Montreal from the Mountain	19
Place d'Armes, Montreal	27
Victoria Square, Montreal	29
Shooting the Lachine Rapids of the St. Lawrence	31
St. Lawrence River Bridge, Canadian Pacific Railway ..	33
Parliament Buildings, Ottawa	53
Chaudiere Falls, Ottawa, in Winter	55
Interior of a Drawing Room and Sleeping Car in a Canadian Pacific Trans-continental Train	61
Main Buildings of Ontario Agricultural College, at Guelph..	73
Canadian Pacific Railway Company's Grain Elevators, at Fort William	81
The "Thousand Isles" of the St. Lawrence	91
Steam Yacht, *Captain Visger*	93

PAGE

Express Locomotive and Car, &c., on Canadian Pacific Railway 111

Interior of a Dining Car on the Canadian Pacific Railway .. 121

Wind Wheel and its Application for Water Supply purposes 161

Calgary, with Rocky Mountains in the far distance 181

Lake Louise and the Great Glacier from the Chalêt .. 193

Field, and Entrance to the Kicking Horse Cañon 201

Victoria Glacier and Hazel Peak, in the Rocky Mountains .. 203

Stoney Creek New Bridge and Vancouver-bound Train .. 209

Heart of the Selkirk Mountains 211

Glacier House Hotel and Railway Station 213

Lake Okanagan and C. P. R. Steamer *Aberdeen* 225

Snow Shed and Adjacent Scenery in the Selkirks 235

Lord Aberdeen's House at Vernon, British Columbia .. 241

Lord Aberdeen's Ranche at Vernon, British Columbia .. 243

Cantilever Bridge across the Fraser River at Cisco 247

Fraser Cañon, by Moonlight 249

Entrance to Fraser Cañon at Yale, and Indian Village .. 251

Giant Hollow Cedar Tree in Stanley Park, Vancouver .. 255

Upper end of Vancouver Harbour, looking towards Hastings 259

Canadian Pacific R.M.S. *Empress of India* 261

Outskirts of Victoria, British Columbia, from Mount Tolmie 265

New Parliament Buildings, Victoria 267

"The Arm" above Point Ellice Bridge, Victoria 269

Forest Scene at Chemainus, Vancouver Island 277

Floating Timber, Saw Mill, and Shipping 279

PAGE.

Wooded Drive in Beacon Hill Park, Victoria 281

Canadian Pacific Train at Glacier House Station 291

The Great Gorge of the Niagara River 321

Folding Map of Canada .. .. *at end*

CHAPTER I.

QUEBEC AND ITS NEIGHBOURHOOD.—How the Author's Information was obtained—Various Classes of People interviewed—Their diversified Opinions—The Author as the "*Happy Traveller*"—His own treatment of People and Things—Liverpool to Quebec—Felicities of the Voyage—Sights and Scenes of Quebec—Wonderful Saguenay Chasm—How caused—Quebec Province—A curious Ship-launching Story of 1750—Quebec City, the Originator of Atlantic Steam Navigation—Cunard Brothers' Share in the Undertaking—*Royal William* from Quebec to London, 1833—Her Career as a Spanish War Steamer—Origin of Cunard Company, 1840—Steam Navigation of to-day.

WITH the object of rendering the statements given in this book as trustworthy as possible in every respect, it may be well to show at the outset how the information contained in it has been gathered. Those who have tried to obtain correct knowledge upon any subject must sometimes have found much difficulty in doing so, owing to the extremely varied standpoints from which it may be viewed, and also to the idiosyncrasies of the people who are thus questioned, and who include the following:—the pessimist—the optimist—the biassed person—the prejudiced individual—the self-interested character—the glum grum man—the

unhappily minded woman—the beam of light, masculine or feminine—the clever professional—the ignorant person, and so on.

Interview, for instance, *Mr. Pessimist*, by saying to him inquiringly, "Canada a splendid country?" and his reply will probably be—"Oh yes! splendid, sure enough, but it will not long remain so."

To the same question, *Mr. Optimist* observes—"Quite right, sir, but nothing to what it will be."

Mr. Biassed Person says—"It is a truly magnificent country in every respect . . . . its *grain crops* are the best in the world."

Mr. Prejudiced Individual remarks—"I am afraid you have been grievously misinformed, sir, what can you expect from a country which is frozen up for eight months of the year?"

Mr. Self Interest says that "the Canadians require much more enlightenment than they at present possess," his secret reason being that they do not appreciate his manufactures as he expected they would have done.

Mr. Glum Grum replies in gruff-gruff style—"Canada a fine country! It seems to me, sir, that *you* don't know much about it, I found it such a beastly hole, and the people so infernally rude, that I very soon came home again." The real fact was that Mr. Grum so richly possessed the art of saying unkind and even rude things without knowing it, that he repelled those who otherwise would have been his good and kind friends.

Miss Squirmie, now of "Sourgrapes Cottage, London," bitterly informs us that "she detests Canada from end to end. That there is no chance whatever for anyone to get along in it, and as for the people, they are so badly dressed, so uncultured in manner, so commonplace in style, and so disagreeable in every way,

that she left the country completely disgusted with everything and everyone in it." Why? for the same reason as Mr. Grum.

Miss Helen Macgregor — the "Beam of Light," narrates her own experiences and those of brother "Rob," in the most charming manner. She tells with joyous spring and animation and humour the story of their life since they left the shores of Loch Lomond—their difficulties and triumphs—the warm friendships they had made—their delightful home—the simple and friendly feelings of the people, and their elegance of mind and manner, etc. In short, this excellent lady gave me such a favourable report of the land that I could only look upon it as a happy retreat for many, and especially for some in the old country.

After most cordially thanking Miss Macgregor for her information, and solemnly saying to her—"You will find yourself reported in my *book* one of these fine days," she replied.

"A book?"

"Oh, yes. I am going to write what I hope will be one of the liveliest, breeziest, most enthusiastic, and most attractively instructive volumes on Canada ever written, and all the more valuable because *your* story will be in it!"

"I hope, Mr. Haldane," she appealingly said, "you will speak kindly of us."

"Kindly, indeed! I shall speak *lovingly* of you."

I wonder how many of the dear good ladies of Canada I met on land and sea during my wanderings, and conversed with as "*The Happy Traveller*," will remember these last remarks, after I had riddled them with all sorts of questions regarding themselves, their people, and the story of their successes, and ending with

a request to accept a copy of my book when out! The light of heaven shine on them all.

The Clever Professional says, that "after careful investigation, he considers the towns and cities of Canada are quite as overdone in his own line of practice as at home, so he intends to stay at home and do the best he can." Quite right, too!

The Clerk and *Shop-Assistant* hold exactly the same opinions. *Mr. Ignorant Person*, however, thinks on totally different lines. This gentleman replies to my remark as follows:—

"Canada, a fine country? My good sir! Do you not know that it is a perfect wilderness, whose winters last three-fourths of the year, and not only freeze up the land and retard vegetation, but freeze up every one in it. That its people are *only* Colonists, who cannot know much on any subject. How then can you expect rational individuals to take any interest in such a place?"

Examples, such as the above, might easily be multiplied, but those given are quite sufficient to show the difficulty of obtaining correct information. With this in view, I had to adopt the judicial system of ascertaining the truth, by examining and cross-examining an endless number of witnesses of all classes, and then, aided by personal observation, summarise the whole of the facts given to me, and thus be enabled to give a correct judgment. This, then, is the system I myself most happily adopted from first to last, during my trips from point to point, out and home, across that vast continent, with results which, it is hoped, will prove satisfactory to all. It may be added, that not only did I treat the people I met in the manner indicated, but I was fortunate enough to obtain a mass of official papers,

maps, documents, reports, bluebooks, etc., from the various Governments, and from very many prominent people in private life. To all of these I am therefore greatly indebted for most useful information, which has been open to me ever since, and which will be referred to in detail as we proceed.

Having thus described the treatment of the *people*, in reference to my outside sources of information, it may here be well to state that, from the day I landed at Quebec, on 13th June, onwards throughout the land, down to my sailing day for home on 17th September, I carefully observed and noted everything relating to the physical conditions of town and country, and plain and mountain, as they were when I saw them. In the manner just described, and in many other ways, I made my tour not only one of great pleasure, but of profound interest all through.

On 4th June, 1898, I left Liverpool in the 6,000 ton handsome twin-screw steamer *Dominion*, of the Dominion Line, the cabin accommodation of which was excellent, and the speed, although very good, not too great to prevent one from obtaining as much benefit as possible from the voyage. She was, moreover, one of the steadiest of ships, even under the influence of a strong wind, the rolling motion having been reduced by means of an important constructional improvement.

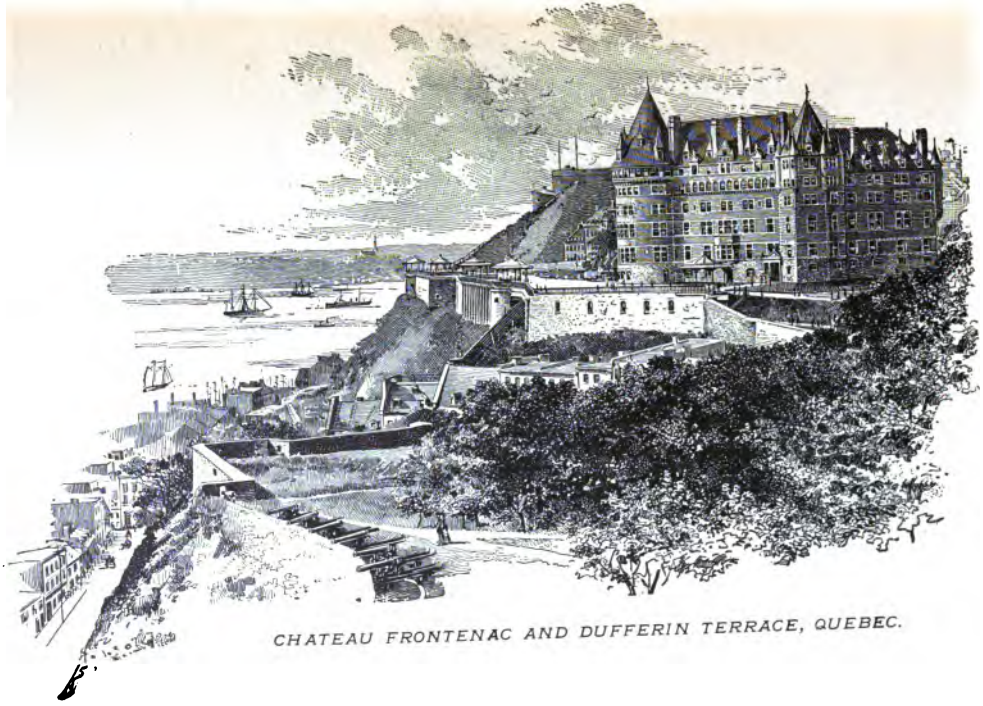
All the staff, from the Captain downwards, were most kind and attentive, and did everything in their power to enhance the pleasure of our voyage. We had a large number of passengers, some of whom were Americans and Canadians who had been visiting England and the Continent, and were returning to their more or less distant homes, together with numerous British tourists.

It would ill-become the Happy Traveller, whose pleasure was greatly enhanced by the presence of the delightful company on board, not to refer to them in glowing terms, and here express his regret at parting with them afterwards.

For the benefit of those who reside in the centre of Canada, or in the middle of England, and who may never have had an ocean trip, it may be well here to state that, by taking a voyage such as that referred to, they will have a delightful and health invigorating treat, as the high-class passenger steamers of the present are such marvels of comfort, elegance, luxury, and speed, when compared with those of the not distant past. This will be, to some extent, apparent to everyone who inspects these vessels, where, not to mention the 1,001 modern improvements which have taken place in their design, construction, and working at sea, the application of improved modern sciences have produced wonderful changes in those interior arrangements which directly influence the comfort of all on board.

As many beautiful but dangerous icebergs were floating about, Captain John James — who preferred safety to speed — shaped our course by Cape Race instead of by the Straits of Belleisle, which would have shortened the run by 200 miles. On the return voyage, however, we came by these Straits, as the ice, by that time, had almost disappeared.

During the first two days at sea considerable reserve usually exists amongst passengers, but this soon wears off, especially if one or two "brilliants" should be amongst them, who kindly act as disturbers of what may be a very flat and uninteresting state of things. In this way the musical, literary, and other talents of the company are discovered, and these, when employed,



CHATEAU FRONTENAC AND DUFFERIN TERRACE, QUEBEC.

either in individual or in combined form, produce the happiest results. So, indeed, was it with us in the *Dominion*, where the "brilliants" referred to so successfully found out the talent of the ship that, by the time we entered the Gulf of St. Lawrence, a delightful evening performance was given to a crowded and most appreciative audience. After skirting for some time the southern shore of Quebec Province, we arrived at Point Levis, opposite Quebec, where we remained only about an hour, and then, on one of the loveliest of days, proceeded direct for Montreal City.

For reasons given in the preface, we are reluctantly compelled to omit very much that might have been said about the exquisitely beautiful and historical Quebec, whose visitors are so continuously on the increase that the new and splendid Chateau Frontenac Hotel had to be built for them on one of the most picturesque sites available throughout the land, as may be partially gathered from the view on the previous page.

In front of the building is the magnificent panorama surrounding Dufferin Terrace, at the extreme end of which is the Citadel. From the lower town, a steeply sloping hydraulic elevator conveys passengers to the high level, otherwise they would have to ascend steep and winding streets. Beyond the St. Lawrence are the beautifully laid out heights of the Point Levis shore, as may be seen in the view opposite; the scenery, however, all round is so lovely that once seen it can never be forgotten.

Amongst the neighbouring sights and scenes of Quebec to which reference must be made is that weird-like and fascinating region known as the "Saguenay," which to myself has long been an object of great interest. This is due to the fact that it is not by any

LOWER TOWN OF QUEBEC, AND POINT LEVIS, FROM THE CHATEAU FRONTENAC

means a *river* in the ordinary sense of the term, of say 80 or 90 feet in depth, but a vast submerged cañon of about 60 miles in length, and from one to two in breadth, the depth of water being in many places 600 fathoms, it is said. Besides this, the banks are very bold and precipitous, the two main headlands, "Eternity" and "Trinity," as shown in the adjoining plate, having heights of 1,900 and 1,800 feet respectively, the water which washes them being of that extremely dark tint usually indicative of profound depth.

The two peculiar names just given owe their origin to the circumstance that, when the discoverers of the Saguenay first saw the locality, they were so over-awed by the scene that they were unable to think of any other words which could express their feelings. For some distance after leaving Lake St. John, the river has no special attraction beyond that created by the beauty of the surrounding scenery. Its character, however, soon becomes so changed as to form the chief object of interest to people from all parts of the globe who visit the neighbourhood. Its marvellous formation seems to be due to the fact that, at some distant period, an overwhelming convulsion of nature wrenched the Laurentian range of mountains asunder, and created an immense fissure in the adjacent surface of the earth, which in time became widened by means of volcanic agency and otherwise, and then filled with water. Should this be true, as no doubt it is, we shall then have the key which unlocks the secrets of other profound chasms, such as the cañons of the Rockies, etc., which will be referred to later on.

A view of special interest in the lower parts of the St. Lawrence, where the river is some miles wide, is that shown on page 13, which represents surf bathing at

CAPES "ETERNITY" AND "TRINITY," ON RIVER SAGUENAY.

Little Metis, in the Province of Quebec, at a point which is reached by the Intercolonial Railway of Canada.

This Province is chiefly a hilly and agricultural one, under French management. The people seem to do well, and have their farms immediately adjoining their homes. So much so, indeed, that for hundreds of miles along the banks of the St. Lawrence, an almost continuous line of dwellings is to be found skirting the water, just as if they had been spread out so as to look as many as possible, but which, for practical reasons, are very conveniently situated. The Canadians of this district seem to flourish immensely in their domestic life, their children, in many cases, ranging from twenty to thirty in number; a physiological fact which was kindly confirmed by a daughter of the English Bishop of Quebec, who told me she knew two families whose children unitedly reached the extraordinary number of *sixty*.

Quebec seems to have been a shipbuilding port for French war vessels and transports as far back as the year 1731. From this date onwards, several vessels of about 500 tons each were constructed from designs supplied by the Home Government in Paris. On the 2nd September, 1750, the transport *L'Orignal*, of about 750 tons, was launched at Quebec, but from want of experience on the part of the builders, she was not only severely damaged in launching, but even when afloat got beyond the control of the checking appliances, ran into a reef of rocks, and sank. By means of patching she was eventually floated, but, drifting away in a foundering state with the strong current of the river, again sank about 400 yards out from what is now Messrs. Allan, Rae & Co.'s wharf, in 90 feet of water, where she remained until 1879.

SURF BATHING AT LITTLE METIS, ON THE ST. LAWRENCE.

The hull having become a source of danger, ship's anchors being frequently caught and lost by it, Messrs. Nobel & Co. were requested to blow her up electrically, a powerful lifting barge being used for removing the fragments. The action of the St. Lawrence sand and water at such a depth for 129 years, had so curiously affected the oak timbers of the lost vessel as to give them a new value when employed for the manufacture of furniture, walking sticks, etc. It may be added that the iron constructional details of the *L'Orignal* were made at Forge Works, which still exist at the city of Three Rivers, near Quebec, which forms a striking feature on the bank of the St. Lawrence, about midway to Montreal.

As the story of the origin of Atlantic Steam Navigation has long been erroneously told and almost universally believed, we may here be allowed to rectify the mistake, because it so closely affects the city to which we have referred in this chapter. In common with the rest of the world, I myself understood that to the *Sirius* and *Great Western* belonged the supreme honour of having successfully opened out the Atlantic passage by steam. I said so in my book, *Steamships and their Machinery*, which, immediately after publication, led Mr. Würtele, Hon. Librarian of the Literary and Historical Society of Quebec, to send me a *Report of the Secretary of State of Canada*, dated 1895, giving full and most interesting information on all points connected with that great event, and containing a great deal which authoritatively and exhaustively refuted the claims made on behalf of these vessels.

Briefly told, the story is as follows:—In the year 1831, aided by a Government offer of 12,000 dollars, the "Quebec and Halifax Steam Navigation Company" was

formed, having among its list of shareholders the names of *Samuel*, Henry, and Joseph Cunard. The object of this company was to build a vessel capable of maintaining communication between these cities, encouragement having been given by the success of the numerous steamboats which had been built at Quebec for river and coasting purposes. So much prosperity had attended these vessels that designs had been prepared for the "largest and swiftest vessel afloat," which was at once begun, and eventually launched on 27th April, 1831, under the name of the *Royal William*, her engines of 200 horse power having in the meantime been constructed by Messrs. Bennett & Henderson, of Montreal.

This momentous event—the launch of a steamer 176 feet in length, by 44 feet in breadth, and 17 feet 9 inches in depth—gave the editor of the *Quebec Gazette* quite as large a field for animated and picturesque description as the literary chief of any present-day paper could have in honour of the launch of a 20,000 ton ocean racer. After successfully running locally for some time, it was decided to send the *Royal William* to England, and she accordingly sailed from Quebec on 5th August, 1833, arriving at Pictou, N.S., on the 8th. From this port she sailed on the 18th for London, where she arrived after a passage of nineteen days, including two days detention at sea owing to the disarrangement of her machinery, which was only natural, considering the primitive condition of marine engineering at that period. Under the name of the *Isabel Segunda* she subsequently became the property of the Spanish Government, and was the first steam vessel of war in the history of nations to fire a hostile shot.

When the *Sirius* and *Great Western* had, in 1838,

made their famous passages from Cork and Bristol to New York in eighteen and fifteen days respectively, Mr. Samuel Cunard—in view of all these great events—thought, in his Canadian home, that "the hour had come," and so, in 1839, he came to Glasgow, armed with letters of introduction to various influential people. These included Mr. Robert Napier, the famous marine engineer, and Messrs. Burns and MacIver, who at that time were the owners of a very prosperous line of coasting steamers.

This well-timed visit of Mr., afterwards Sir Samuel Cunard, resulted in the formation, in 1840, of the "British and North American Royal Mail Steam Packet Company." As, however, this magnificent title proved too ponderous for daily use, it was changed into the "*Cunard* Line," in honour of the Quebec citizen, who had given it the start in life, and thus set a-rolling the ball of prosperity for ocean steam navigation all over the world, and indeed for all time. Well may Quebec, therefore, be anxious to retain the credit of having been the originator of this great revolution in ocean navigation, which I am pleased to have the honour of truly recording in these pages.

CHAPTER II.

MONTREAL AND ITS SURROUNDINGS.—Jacques Cartier, the Columbus of Canada—Origin of the Name—Champlain, its Benefactor—Maisonneuve, the Founder of Montreal—Topography of the City—Some of its prominent People—A former Governor-General and his Mistaken Guest—Origin of McGill University—Its first Principal—Subsequent Career—Dean Bovey—His New Engineering and Physics Buildings—Wonderful success of the University—How the Happy Traveller was Interviewed—Montreal and its Public Buildings—Electrical Tramcars and their Peculiarities—River St. Lawrence—Its Leading Objects of Interest—A great River Steamer.

WHATEVER may be said concerning the discovery of Canada by those most intimate with the subject, the Spaniards claim the honour of having been the first in the land, and to have originated its name. Their early records inform us that when the Castilians in their world-wide search for silver and gold mines entered the Bay of Chaleur, and did not find any, they exclaimed *Aca Nada* — "Nothing here." This was subsequently reported to Cartier, who at once adopted the phrase as the present name of the country. Another, and, perhaps, more probable derivation of the title, is supplied by the Iroquois Indian word

Kannatha, pronounced "*Kannada*," signifying a village, or assemblage of tents. In any case, the name is an elegant one and easy to write, which is very important.

Upon landing at Montreal, which is the commercial capital of the country, I was struck with its beautiful appearance, particularly when seen from the "Mountain," as shown in the plate on the opposite page, which gives a good idea of its western portion, and also the St. Lawrence. Before going further, however, a few remarks may be made respecting the history of the city, which, briefly told, is as follows:—

When Jacques Cartier, the Columbus of Canada, sailed up the great but unknown river, on St. Lawrence Day, 1535, he found, to his great surprise, the walled town of Hochelaga on the spot now occupied by the present seaport. More than this, he discovered that its 1,500 inhabitants were delighted to receive himself and his crew, somewhat, we suppose, in the "Glad to see you"—"Charmed to meet you"—"Hope you are well and hearty" style of the old country, chiefly by gesticulation. He also discovered the adjacent eminence, which he named "Mount Royal," and from which Montreal derived its name.

In the year 1611, Champlain visited the locality, no doubt expecting to find Hochelaga still in existence, but by that time it had mysteriously vanished. This famous individual not only found out the Great Lakes, but in many other ways so benefited the new country that, in 1898, a handsome monument was erected to his memory by the citizens of Quebec, in front of the Chateau Frontenac. In the year 1642, the foundation stone of the future city of Montreal was laid by the famous Maisonneuve, who, in the midst of somewhat romantic ceremonies, performed the operation.

MONTREAL, FROM THE MOUNTAIN.

To these three men alone, above all others in early days, Canada is indebted for those master strokes of genius and energy which raised her out of the depths of obscurity and set her on her feet amongst the future great nations of the world. So fully do the inhabitants of the vast Province of Quebec—who are about three-fourths French—recognise these facts that the names of Jacques Cartier, Champlain, and Maisonneuve, have been immortalised in very many ways, chiefly by being bestowed upon the suburbs, streets, squares, banks, monuments, etc., of Montreal, Quebec, and other towns.

The doings of the French, and the British, and in some respects, the Indians, in developing the country, have formed the bases of many books and stories which have painted a moral and adorned a tale in the pages of history, but to these we need not refer.

Geographically speaking, Montreal is built upon an island of the same name, about thirty miles in length, by about ten in width, which is washed by the St. Lawrence, and by an arm of the river Ottawa. The city is not only remarkable for the charms of the adjacent scenery, but for those also which belong to itself, consisting chiefly of handsome, broad, richly tree-bordered streets, public buildings, squares, churches, colleges, and everything else, indeed, which constitutes the general make up of any great centre of population. A city, which in 1759, had a population of only 4,000, but which, through the expansion of trade and commerce now numbers fully 300,000.

At the commencement of my special tour through the country, I spent fully three weeks in Montreal, diligently scanning it round and round, and through and through, and delightfully making the acquaintance of many of its prominent people, who proved of great value

in aiding me in my enterprise, and whose kindness will never be forgotten. As I ranged over the town and outlying districts, the lay of the land soon became apparent, and from this I found very much to be learnt, with which, however, I need not trouble the reader, as Montreal is so well-known. With this in view, I shall only endeavour to throw a few side lights upon people and things connected with the city.

It is said of a former Governor General that on one occasion, whilst a "celebrated author" was staying at the Windsor Hotel, he had the honour of receiving a kind invitation to dinner from their Excellencies.

"I really cannot go," said Mr. Smith to the messenger who had brought the note, "my boots have not yet arrived."

"Boots, or no boots, you will have to *come*," was the reply, and so the "distinguished writer" went.

"How do you do Mr. Smith, I am delighted to see you, let me introduce you to His Excellency," observed the Countess, as he entered the drawing room.

After the usual stiffish remarks which people make when they meet for the first time, the Viceroy said:—"Allow me to congratulate you, Mr. Smith, upon your fascinating book, with which Her Excellency and myself are delighted."

"A book!" replied Smith, "I never wrote a book in my life, surely there must be a mistake somewhere."

Gradually, and very genteelly, the enthusiasm of their Excellencies toned down to chilly reserve as they saw their error. Next day the real luminary turned up, and he, too, had a similar invitation sent to him, the A. D. C. adding to his note—"Be sure you are the *right* 'Smith' this time."

It was of the utmost consequence for me during my

visit to Canada to have as many avenues as possible to information throughout the land, With this in view, I was fortunate in meeting Dean Bovey just before he left for his holidays—a circumstance which had a very marked effect upon my movements. Before saying anything about this gentleman, however, it may be well to make a few remarks concerning the Institution with which he has been so long intimately associated.

Amongst the splendid edifices which skirt the sides of the long and handsome Sherbrooke Street, may be mentioned the truly magnificent and immense range of buildings of the McGill University, to the *Engineering* portion of which we shall chiefly refer. For such purposes alone, this Institution is authoritatively said to have no rival in the world. The origin of the University was due to the liberality of the Honourable James McGill, a wealthy citizen of Montreal, who, in the year 1813, presented a sum of £30,000, with the object of founding a centre of education for Canada, the buildings for which were not long afterwards proceeded with, and eventually opened in 1829. Through the liberality of other gentlemen in later years, including Mr. W. C. McDonald, Mr. Thomas Workman, Mr. Peter Redpath, and many others, the University has been enlarged step by step.

At an early period in its history, the attention of the authorities was drawn to the importance of establishing a department of Practical Science, and in the year 1856, Mr. T. C. Keefer, C.E., C.M.G., was appointed Professor of hydraulic engineering. Others followed in other branches, until, in 1876, Professor Henry T. Bovey, M.Inst.C.E., LL.D., M.A., Fellow of Queen's College, Cambridge, was elected to fill the chair of Civil Engineering and Applied Mechanics. In 1878, this

department was separated from the Faculty of Arts, and was constituted a Faculty of Applied Science, with Professor Bovey as Dean, the teaching staff consisting of himself, assisted by others. It may here be well to add that to this gentleman's advice and management the University owes the present magnificent development of the latter Faculty.

On 25th October, 1890, a new career was opened out for the University as the foundation stone of the Engineering portion of the premises was laid by His Excellency, Lord Stanley of Preston, Governor General of Canada. From that time the work was rapidly pushed forward, until eventually the *Engineering* and *Physics* Buildings were finally opened by Lord Stanley, on 24th February, 1893. The first named contains a very large and valuable collection of every kind of machine, and engine, and appliance necessary for the most advanced research, as well as for carrying on the routine work of the Institution, which now includes every department of theoretical and practical engineering, for which, regardless of expense, ample accommodation has been provided in the most exquisitely beautiful and complete forms.

The last-named edifice has been erected and similarly equipped for the teaching and study of Physics, including Mechanics, etc., also for the prosecution of original research in the Constructive Arts.

In December, 1898, the new *Chemistry* and *Mining* Building was opened by His Excellency the Earl of Minto, Governor General of Canada, successor to Lord Aberdeen. This edifice, as well as the others just described, is due to the generosity of Sir William C. McDonald, K.C.M.G., who, on this occasion received the honour of knighthood in recognition of his great services. As an indication of the extent and value of

the building, it may be mentioned that Sir William expended a sum of 750,000 dollars in its erection, equipment and endowment, in addition to his previous gifts amounting to 2,000,000 dollars.

The locality in which the University is placed has been well chosen, as a handsome avenue leading to Sherbrooke Street on the one hand, to the mountain and its lovely park in close proximity to it on the other, with the beautifully wooded grounds in front, and with broad carriage drives leading to the various departments, produce in combination a truly splendid effect.

The wonderful success of this grand enterprise has been the result of a variety of causes. Primarily, the financial aid so liberally bestowed upon it, not only by those we have named, but by many other Montreal citizens, who presented large sums for the endowment of chairs, exhibitions, scholarships, medals and prizes. In addition to these, they gave handsome subscriptions in aid of the library, museum, apparatus, current expenses, and indeed everything else that was needed, from time to time, in furthering the work to the best advantage.

Secondly, from a professional point of view, it may be said that no one could have laboured more constantly and zealously than the original Principal, Sir Wm. Dawson, LL.D., F.R.S., a native of Pictou, Nova Scotia, who for thirty-eight years, aided by a distinguished staff of professors, performed all that could be done to advance the interests of the University, and make it what it has now become. Advancing years rendered it necessary for him to retire from active duty, and so he was succeeded in 1896 by the present principal, Mr. Peterson, LL.D., who has ably taken up the reins laid down by his eminent predecessor.

Such then, in brief, is an outline sketch of the

Applied Science Department of the University, presided over by the gentleman with whom I delightfully spent my second afternoon in Montreal. Not only did he then show me as much of the establishment as he could in a limited period, but invited me to come next forenoon to see the rest of it, and of course I went. To my surprise, an interviewer from the *Witness* office desired to overhaul me in the usual Transatlantic fashion, as follows:—

He wanted to know my place of birth—my residential career since I arrived in London as a young Australian—my profession, and all about it—my age, "somewhere about"—what were my impressions of Montreal, and what improvements I thought it needed—how long I was going to be in the country, and also what was the object of my visit. What about my Engineering books, etc.—how I was going to collect material for a new one on Canada. So on, and so on, to the end. Nothing, however, seemed to please Mr. Dillon more than the fact that *his* paper was the first Canadian one I had read on board the S. S. *Dominion*. In the afternoon I was treated to a whole column in the *Witness*, describing my appearance, etc., and also my antecedents, intentions, and all the rest, which not only made very pleasant and instructive reading, but gave me a nice little set off at the beginning.

Whilst in Montreal, the Dean also very kindly gave me a number of letters of introduction to the most influential people he could think of in the city, as well as all over the country, from Quebec to Victoria, and from these, as mentioned in detail in other pages, I subsequently obtained much information, which it is hoped will increase the value of this treatise.

Montreal is rich in magnificent buildings of all kinds, but for obvious reasons a brief description of some of

them is all that is necessary. The first to claim attention is the *Bank of Montreal*, which, as the earliest Bank in Canada, was opened in 1817, and is a very handsome building, as may be partially seen on the right of the view on next page. To the manager and his colleagues of this Institution I am much indebted for the courtesy shown to me during my visits to them, a few strokes of the pen in *their* territory enabling me to draw upon their very numerous and beautiful branch establishments throughout the country as I travelled along.

Adjoining the bank is a partial view of the *General Post Office*, which, although a splendid building, has already proved too small for the requirements of a city that has, during recent years, increased so rapidly in size and importance.

In the foreground, or Place d'Armes, is shown the handsome monument to Maisonneuve, previously referred to. The obelisk is of exquisite workmanship, the main and highly expressive statue on the top, as well as the minor figures at the corners, and the picturesque panellings at the sides, all of which are in bronze, being art studies in themselves.

Our last view of Montreal city, shown on page 29, is taken from that lovely spot, Victoria Square, which, in conjunction with the previous illustrations and remarks will give a fair idea of the beauty of the city. An admirable statue of the Queen adorns the foreground, the sides of which are embellished with avenues of trees, and with handsome ranges of public buildings, whilst the back-ground of the picture is filled in with fine churches, and a portion of the "mountain" to which reference has already been made.

As a temporary home on a large scale for the

PLACE D'ARMES, MONTREAL.

innumerable visitors to Montreal, the *Windsor Hotel* claims primary attention. This hotel is not only situated at the side of the lovely Dominion Square gardens, with handsome churches and public buildings immediately adjoining, but it is the largest and finest in Canada, and quite equal in extent and grandeur to many of the best in the British Isles. Its spacious and magnificent dining hall seats fully 700, and this in itself may give a good idea of its capacity in other ways, as I happily experienced, for the comfort of its constant succession of crowds of visitors of all nations, frequently of the highest rank.

Throughout the whole of Canada, and also through part of the United States, on the return trip, I found that overhead wire electrical traction for tramcars reigned almost supreme. Some idea of the rapidity with which suburban traffic is conducted may be gathered from the fact that on long and straight parts of a line the speed frequently reaches thirty miles an hour, that in town being regulated by city laws, and by the nature of the streets and their traffic. Besides this, the cars are admirably suited to the requirements of summer and winter service, their bodies being detachable from their under frames, and interchangeable with others, according to the season. They are also brilliantly lighted by electricity, and in cold weather are heated in the same manner.

It is wonderful what these cars can accomplish in the way of running up steep inclines, and also in hauling heavy loads. Very frequently, during show periods, it was a common occurrence for one densely crowded *motor* car to pull after it five cars crowded to the utmost, the streets in this case, however, being level.

Fares were very low, a payment of two-and-a-half

VICTORIA SQUARE, MONTREAL.

cents for a single trip, enabling one to travel any distance in the great cities, and if one car was not sufficient to carry a passenger to his destination, a free "transfer" to one or more cars did so, which was a great convenience. Runs into the country cost more, but these might be from fifteen to twenty-five miles in length. Further, it may be said that all the tramway companies are more or less financially prosperous, owing to the enormous traffic thus created.

The river St. Lawrence is nearly 2,200 miles in total length, and after undergoing a great variety of changes in formation and width, due to the lakes through which it passes, and the islands around which it flows, arrives at Montreal with a breadth of one-and-a-half to two miles. From this point to Quebec it is irregularly widened out by means of numerous islands, and by Lake St. Peter, to a breadth at one spot of about nine miles. From Quebec, however, to the gulf of St. Lawrence—a distance of 420 miles—it gradually attains a final width of thirty-five miles. Its features are remarkable for diversified beauty, and are therefore a source of great attraction to the immense multitudes of people who visit its waters, shoot its rapids, or sail or row delightfully over its placid surface.

The three leading objects of interest on the river, in the neighbourhood of Montreal, are the Lachine Rapids, the new railway bridges, and the Island Park of St. Helen's Isle. The first named are so attractive that few strangers enter that city without running the torrent, which is so swift and tumultuous that no vessel can pass up it. The village of Lachine is nine miles above Montreal, and between these points a railway and a ship canal have been constructed, the latter being used by steamers in their upward passage to Lachine, at

SHOOTING THE LACHINE RAPIDS OF THE ST. LAWRENCE.

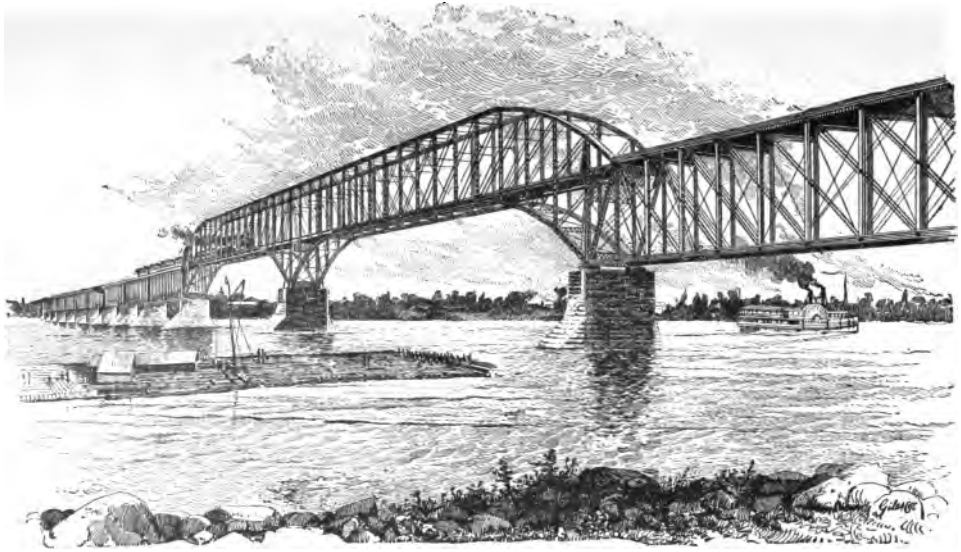
which place they re-enter the river for the grand performance, as shown in the view on previous page.

This, to many, is a dangerous and exciting trip, as the vessel gradually enters the rapids, and begins to roll and toss about, heading at one moment straight for an adjacent rock, and then by a skilful turn of the wheel by the Indian pilot, just clearing it by a few feet, any mistake on his part possibly involving the sudden destruction of the ship. A good deal of high-toned and even poetic language has been used in some descriptions of this scene, but, simply told, it is one of deep interest and great beauty.

The steamer on her voyage passes beneath two new and handsome steel-built long-span bridges of admirable design. The first of these, which is shown in the view on page opposite, was built by the C. P. R. Company, the second by the Grand Trunk Railway Company, to supersede the old single line Victoria tubular structure, which was opened by the Prince of Wales in 1860.

This bridge was nearly two miles in length, and as it had become totally insufficient for present traffic purposes, a new structure of open lattice girder type was erected to accommodate a double track railway, an electric tramway, and roadways for carriage and foot passengers. A feature of great engineering interest connected with it is the fact that the new bridge was erected upon the same piers, and *around* the old one, without in any way interfering with the traffic. When the former was completed in 1898, the iron work of the latter was gradually removed, the trains running through it all the time.

It may be mentioned that the Richelieu and Ontario Company's steamer, shown in the view, is heading direct for the Lachine Rapids, which are close at hand, and



ST. LAWRENCE RIVER BRIDGE, CANADIAN PACIFIC RAILWAY.

that the gigantic timber raft, with its working staff on board, is gently gliding with the current to Quebec.

The water way for ocean, and coasting, and river steamers down to Quebec is broad and deep, the shallow parts being marked off for pilotage purposes. Amongst the sights and scenes of river life the timber rafts just referred to attract much attention, owing to their strange appearance and immense size, and the number of men who live upon them in roughly built huts. Their Canadian boat songs, and sometimes extraordinary freaks providing considerable amusement.

On page 9 we give an illustration of the Quebec and Montreal liner *Quebec* in harbour. This is one of the large, handsome, and very numerous fleet owned by the Richelieu and Ontario Navigation Company, and may be considered a standard type of the sometimes very high speed ship for river and lake service all over the continent, the great popularity of which is due to admirable design and construction.

Briefly described, the main deck is used entirely for second-class passengers and cargo purposes, the deck above, with sleeping staterooms at the sides, having for the whole length of the deck house a magnificent, lofty arched roofed, and handsomely furnished drawing-room, occupying the space between them. A broad staircase leads to the promenade galleries above, which give access to the upper tier staterooms, and provide a splendid view of the saloon below. The covered and open promenades at the ends and the sides are a great source of enjoyment to passengers, who frequently crowd them, an abundance of chairs being at hand for their use. The pilot house in front, with its glass sides, is the official home of those who have sometimes very difficult navigation to pass through, and even this has

a roof which, for observation purposes, is unequalled. By night, one of these steamers on its passage, a-blaze from end to end with electric light, is a splendid spectacle. An illustration of a smaller vessel is given in the plate of the Lachine Rapids on page 31.

For shallow rivers, where, by means of a signal from anyone on shore, a steamer may be run into the sloping and perhaps wooded bank at any point, one very broad paddle wheel is placed at the stern instead of those amidships, as shown in a later view of one of these vessels on Okanagan Lake. By this means a steamer is easily backed off the beach, and is also allowed to come so close to a railway pier, and the train which stands upon the edge of it, that a temporary plank gangway placed between them allows passengers and goods to be transhipped direct.

In every respect, high-class ships of this type, although entirely different from those in European services, are nevertheless magnificently adapted for the long night and day trips they have so frequently to perform, and for the very convenient opportunities they provide at all points for those who desire to see to the best advantage the beautiful scenery.

CHAPTER III.

CANADA, AND ITS TRAVELLING RESOURCES.—Dimensions of the Country—Its Division into Provinces—Canada as it was—Two Methods of originating a Railway — Origin of the Canadian Pacific Railway—Explorations and Surveys of the Country — Wonderful Rapidity of Construction — Laying the last Rail—Immediate Results—Course of the Line across the country—Other means of Travel by Land and Water—Montreal, Ottawa, and Georgian Bay Canal—Its object — General Plan — Enormous Lake Traffic — Commercial Advantages of the New and Direct Route to the Sea—Subsidiary Advantages—Engineering Features of the Canal—Opinions of eminent Canadians regarding its Value.

ITHERTO, we have been standing only on the borders of the, at one time, Great Unknown territory of Canada, but before swinging off into the realms of Western space, it may be well to explain a few things concerning the country in general.

Firstly, then, let us consider its size, and its subdivision into Provinces. *Secondly*, the means employed to open out these Provinces as places for the successful application of labour. And, *lastly*, the amount of success which has attended these efforts, and their bearing upon the future, both of the Dominion and also of Great Britain.

Canada is of immense size, as may be discovered

in two ways, as follows:—Make an outline tracing of all the continental European countries, excluding Russia, but including the British Isles. Now make another outline sketch of Canada to the *same scale*, and, placing the former over the latter, it will be seen that the area of the Dominion is fully double that of Norway, Sweden, Denmark, Holland, Spain and Portugal, France, Germany, Austria, Italy, &c., which, perhaps, is not quite what some people would expect. A more practical way of ascertaining this fact is to traverse the country by the Canadian Pacific Railway from Montreal to Vancouver, either in frequent stop-over fashion, or by going straight ahead from end to end, which will enable people to learn very much of which they at present have no conception.

Canada is divided from the United States by a frontier line which extends from the Pacific coast along the parallel of 49° N. Lat., as far as the 95th degree of W. Long., to the great Lakes, and, passing through the centres of Lakes Superior, Huron, Erie, and Ontario, and their connecting lines, runs down the middle of the St. Lawrence towards Montreal. After rounding the borders of Quebec, and jutting northwards, where the State of Maine protrudes into New Brunswick, it ends at the mouth of the St. Croix river, which flows into the Bay of Fundy. All territory, therefore, to the south of this line belongs to our good cousins, whilst everything to the Far, Far North, except Alaska, is Canadian property.

It may here be remarked that the eastern portion of this vast country was, up to the year 1867, divided into independent Provinces, each having its own system of government, as had British Columbia on the western coast. The central portion, which includes the prairie

and plain regions, was under the sway of the Hudson's Bay Company, whose rights were purchased for £300,000 and one-twentieth of the land. Long before this, however, it had become evident that a better arrangement should be adopted, and so measures were eventually taken by some of the leading men of the country, amongst the most energetic of whom were the late Sir John Macdonald, Sir Charles Tupper, the Hon. George Brown, and the Hon. Peter Mitchell at that time Minister of Marine and Fisheries. During the year named, this movement resulted in the welding of the whole of the Provinces into one vast combination, ever since known by the name of "*The Dominion of Canada*," which, since that event, has flourished immensely.

The Provinces referred to include Prince Edward's Island, Nova Scotia, New Brunswick, Quebec, Labrador, Ontario, Manitoba, and British Columbia, also the districts of Keewatin, Assiniboia, Saskatchewan, Alberta, Athabasca, and the territory beyond which embraces the Yukon.

Having sketched in outline the Canada of to-day, the next thing to do is to show how the immense resources of the country can be best utilised for the benefit of the world at large, as well as for those more directly interested. For very many years the interior was a vast wilderness of forest and prairie, and lake and mountain, only slightly known to adventurers, discoverers, Indians, and traders. Now, all this is happily changed, a new series of events having been instituted during the last few years, by means of which the whole country has been wonderfully opened out to trade and commerce; to the origin and development of towns and cities; and, as a natural consequence, to the great increase of its population.

There are usually two ways of originating a railway commercially, one being to design it so as to relieve a traffic-route already in existence which may be seriously over-burdened for want of new outlets; the other being to create by its presence a traffic which does *not* exist, but which may abundantly do so if the proposed line is skilfully planned throughout by those who know the prospective resources of the district it has to pass through. Not only so, but its details should be so designed that, while insuring perfect safety on one hand, the cost of construction should be reduced to the utmost. Here it is, therefore, where the greatest all round foresight and knowledge are required. So far as Canada is concerned, these conditions have been most ably fulfilled in the design and construction of the line over which I so recently travelled. Here, however, a few preliminary remarks may be appropriately made.

A railway from ocean to ocean across Canadian territory had long existed in the imaginations of a few in that country. In time, however, it became the hope of many, but, soon after the confederation of the Provinces, its realisation became a political necessity. At this point, the Government conceived the idea of constructing the Canadian Pacific Railway—a work not only of immense proportions, but one, too, which was hedged about with difficulties of no ordinary nature.

Previous to the construction of the line, the country through which it had to pass was unexplored, and included a vast region where deep lakes and great rivers in every direction opposed the progress of the engineer. For nearly 1,000 miles beyond the Red River stretched an immense plain, then came the mountains, range after range in rapid succession, and through all this territory, for a distance of about 2,000 miles, the surveys had to be

made at a great expenditure of time and money. People became impatient, and found fault with the scheme. There were serious differences of opinion on the subject, so much so, indeed, that it was not until 1875 that the work of construction was begun by the Canadian Government.

The explorations and surveys for the railway had exposed the character of the country it was to traverse. In the wilderness bordering on Lake Superior, forests of pine and other useful timber, mineral deposits of incalculable value, and millions of acres were found in the vast prairie region between Winnipeg and the Rocky Mountains, which proved to be wonderfully fertile. Towards the mountains, great coal fields were discovered, and British Columbia, beyond them all, was known to contain nearly every element of traffic and wealth. The success of the early settlers on the prairies of the North West was attracting others. The political reasons for constructing the line were lost sight of, and there was no difficulty in finding a party of capitalists ready to relieve the Government of the undertaking, and carry it on as a commercial enterprise.

In this way the *Canadian Pacific Railway Company* was formed in 1881, and immediately afterwards entered into a contract with the Government to complete the line within ten years. As the latter had granted numerous privileges and immunities, and substantial executive help, the work of construction was vigorously commenced at Winnipeg, and pushed westward at great speed.

Some idea will be formed of the rapidity with which a prairie line may be laid when it is known that for months in succession the average rate of advance by the Company's staff was fully three miles a day, sometimes,

too, as much as five, or even six miles, was attained in the same period. By the aid of armies of men having all the best appliances, and thousands of tons of dynamite for blasting purposes, the end of the third year found the railway at the summit of the Rocky Mountains, and the fourth in the Selkirks, nearly 1,050 miles west of Winnipeg. During this period, the government section of the line from the Pacific coast was carried on with the utmost despatch, until November 7th, 1885, when the last rail was laid no less than *five years* ahead of contract time.

The energies of the Company had not been confined to the mere fulfilment of its contract, much more having been done to enable the railway to become a successful enterprise. Independent connections with the Atlantic coast were secured by the purchase of lines leading eastward to Montreal and Quebec; branch lines to the chief centres of trade in eastern Canada were made to collect and distribute the traffic of the main line, and other branch lines were laid in the North-West for the development of the great prairies.

The end of 1885 found the Company in possession of no less than 4,315 miles of railway, including the longest continuous line in the world, extending from Quebec and Montreal to the Pacific Ocean—a distance of 3,050 miles—and, by the middle of 1886, all this vast system was in full working order. Villages, towns and cities, followed close upon the heels of the constructors. The forests were cleared away; the soil of the prairie was turned over; mines were opened; and even before the last rail was in its place, the completed sections were carrying a large and profitable trade. The influence of the Canadian Pacific Railway upon the commerce of the world was felt from its very outset, and to such an

extent as to affect, in a marked degree, the trade of China and Japan, by means of magnificent 6,000 ton mail steamships, which were specially built to run to these countries from Vancouver.

The three years, from 1886 to 1889, were marked by an enormous development of traffic, and by the addition of 800 miles of railway to the existing system. These lines spread in various directions, with the object of benefiting the numerous mining, agricultural, manufacturing, and other districts. And as the Company's lines have so long been completely organised, the natural question—"*Do they pay?*"—is answered by the fact that the earnings over the whole system have been of a very satisfactory nature, notwithstanding long sustained periods of commercial depression. Canada's steel built roads have given such an impulse to all her industries that the modest colony of the past is now an energetic nation, with great plans, and hopes, and benefits to confer upon her ever increasing population. Later on, we shall direct attention to the wonderful peculiarities of the line in detail.

So greatly has the general traffic of this railway increased during late years, that not only has the Windsor Street terminus in Montreal been considerably enlarged, but the new and handsome Place Viger Station and hotel have been recently erected at the other end of the city, the style of the latter running pretty much upon the French Baronial lines of the Chateau Frontenac at Quebec, shown on page 7.

In reference to the former, it may be said that it is the main terminus of the whole line, and that, as it is placed close to the Windsor Hotel, it shares with it all the beautiful surroundings of Dominion Square, previously described. Its architecture is of the massive

Romanesque type, which has a handsome appearance. As people from a distance have frequently to wait a long time for their trains, the greater portion of the ground-floor area is occupied with waiting rooms, the upper floors being set apart for the use of the principals and their colleagues, the engineering and commercial staffs, etc., who in the aggregate control the working of the line throughout, aided by branch offices at important towns.

The grand waiting room for all classes is very spacious and magnificent, its lofty, groined, arched roof, its polished granite columns, its mosaic floor, large plate glass windows, and profusion of polished oak seats, its beautiful paintings of some of the most attractive parts of the line, and other works of art and general decoration producing a splendid effect.

The two large adjacent first-class waiting rooms are handsomely furnished, and fitted with every comfort and luxury. The walls of both rooms are richly embellished with immense photos. of some of the most striking scenes in the Rockies, etc., thus forming a delightful retreat for prospective passengers. Full provision is also made for the comfort and convenience of emigrants bound for the Far West.

Referring to the map at the end of this volume, it will be seen that the east coast lines of the C. P. R. begin at St. John, N.B., and Quebec, and converge until they meet in Montreal. From this point the main line proceeds westward by Ottawa, and then onwards to Sudbury Junction, where it branches off in one direction northwards by the lovely shore of Lake Superior to Fort William, and also in a southerly direction to Sault St. Marie, and to the United States cities of St. Paul and Minneapolis, from which it is extended through the

States of Minnesota and North Dakota into Canadian territory again, joining the main line of the C. P. R. at Moose Jaw, in Assiniboia.

From Fort William the line proceeds to Winnipeg—the half way city—and then onwards by Brandon and Calgary to the verge of the Rocky Mountains, which, with other ranges, have to be crossed on the road to Vancouver. It may be added that, besides the main line, there are many branches to various places which are shown on the map, and which have, unitedly, a total length of 9,000 miles, not to mention extensions still in progress.

Scenically described, the country from Montreal to, say, 50 miles eastward of Winnipeg, is very pretty, richly wooded, moderately hilly, and frequently interspersed with beautiful lakelets and rivers. From the 50 mile point onwards to Calgary, a distance of about 900 miles, the line runs through prairie land, well brush-wooded for the first few miles, and then, for the next 870, with only a few good sized trees to enliven the view. In fact, one is really on an ocean of *grass*, sometimes billowy, and at other times nearly a dead level, with the clear lined horizon all round, but, nevertheless, imperceptibly rising in vast steppes until an altitude of 3,388 feet above the sea level is reached.

From Calgary, the scene changes rapidly as the Rockies, now very prominently in sight, are swiftly approached, but when their portal is passed at "The Gap," a completely new world is opened out. A world of splendour, and beauty, and rugged grandeur, and snowy peaks, and beautiful rivers, and awe-inspiring cañons, and, ultimately, lovely plains fringed with receding mountains, until Vancouver is reached, after a run of nearly 650 miles. As, however, all these scenes, as

well as the various methods of developing the resources of the country will be described in other chapters, no more need here be said about them.

In addition to the lines just referred to, there are many other extensive and varied means of transportation on land and water throughout the country. These chiefly comprise the Grand Trunk Line with its fully 4,000 miles of track, the Canadian and Atlantic System, and the Canadian Government Railway system, which includes the Prince Edward Island Railway, and the Inter-colonial Railway which connects Montreal and Quebec with Moncton, St. John, Halifax, and Sydney, Cape Breton, otherwise termed the "*Picturesque Route to the Maritime Provinces*" of New Brunswick, Nova Scotia, Prince Edward Island, Cape Breton Island, the Magdalen Islands, and Newfoundland, whilst sweeping, at the same time, the seaside resorts of the lower St. Lawrence.

The Grand Trunk includes, amongst its numerous splendid works, the new bridge over the river just named, and the new and handsome steel-built bridge across the rapids of the Niagara. This bridge is in one arch of 550 feet span, supplemented by two other spans which, with the approaches, make its total length fully 1,100 feet. It has also two floors, one for carrying the railway, which is 252 feet above the water, and the other below it for general road traffic and tramcar purposes; the whole structure being made to carry six times the load which the historic suspension bridge it has now displaced was calculated to bear.

Chief amongst the very numerous river and lake steamers which traverse the country in every direction are those of the Richelieu and Ontario Navigation Company, which owns a large fleet of handsome vessels,

chiefly employed in those lovely regions lying between Niagara and the sea, which have thus become so popular.

Amongst the projected schemes for improving the internal communications of Canada are various railway and steamboat extensions to which no reference need here be made. The scheme, however, above all others, which not only vitally affects Canada, but all the rest of the world, is that magnificent enterprise of the near future termed the "*Montreal, Ottawa, and Georgian Bay deep water Canal,*" which may be briefly described as follows:—

The object of its promoters is to form a direct waterway of at least nine feet in depth from Georgian Bay on Lake Huron to the head of the ocean navigation on the St. Lawrence at Montreal, which is fully 900 miles from the Atlantic *via* the Straits of Belleisle, and incidentally the development of hydraulic, electric, and other sources of power for works of various kinds along the route. Besides this, the scheme involves the utilisation of many other sources of revenue. For these purposes, it is proposed to utilise chiefly the Ottawa River, the Mattawa River, Lake Nipissing, and French River, as shown on the folded map.

These navigable stretches of water will be so improved, aided by short earth works where required, as to form a system of river, canal, and lake navigation on a scale suited to the volume of the traffic which is now waiting for it, and which is already more than double the amount of tonnage passing through the Suez Canal.

This extraordinary circumstance is due to the fact that the Great Lakes, with a coast line of 4,000 miles, and an area of 95,000 square miles, afford the largest system of deep water inland navigation in the world.

Vast wealth is already centred in the territory surrounding them, the immensely rich resources of which have been only partially worked. Already an enormous traffic has been developed, which may be gathered from the fact that from 28,000,000 to 30,000,000 tons of freight pass Detroit annually, and at least 18,000,000 tons a year pass through the Sault Ste. Marie Canal connecting Lake Superior with Lake Huron, which contrasts favourably with the 9,238,603 tons of the Suez Canal in 1898. Putting this part of the business into nut shell form, it may be said that an enormous traffic now exists ready to benefit and be benefited by the proposed canal. A traffic so great and ever increasing that it has been authoritatively stated that, in about ten years, the canal would be practically overtaxed, for the following reasons.

The opening up of this new route would complete a *direct and unbroken navigation* for 2,000 miles into the heart of the country, and would thus form an important link in the greatest of international waterways, and act as a great stimulus to trade and manufacture in the neighbouring provinces.

Secondly, owing to the *directness* of this route, when compared with that now existing, from Chicago to Montreal, *via* Lakes Michigan, Huron, Erie and Ontario, and the St. Lawrence to Montreal, a great amount of distance is saved, thus :—

From Chicago to Montreal, *via* the St. Lawrence, the distance is 1,287 miles, whilst by the proposed canal it is only 980 miles. On the other hand, from Chicago to New York, *via* the Erie route, the distance is 1,415 miles, thus saving in the first instance 307, and in the other 435 miles.

It may further be noted that the distance from

Chicago to Liverpool, *via* the Erie Canal and New York is 4,505 miles, and *via* the Ottawa Canal and Montreal 3,780 miles, thus saving no less than 725 miles in transit. In addition to this and all other advantages, the Ottawa route is safer than any other, owing to the sheltered and much better nature of the navigation, as the dangerous shoals and currents in other parts are thus avoided.

Constructively speaking, the proposed route possesses the unique advantage of requiring throughout its whole length of 430 miles, from Montreal to Georgian Bay, only 29 miles of excavated canal, and even of this, 15 miles are already in existence, but requiring alteration.

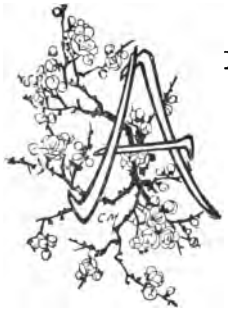
So far as the river portion of the navigation is concerned, the improvements chiefly include the beautifully simple process of raising the level of the water at certain points by means of dams, thus obtaining greater depth without dredging. In this manner, the foundations of immense hydraulic and electric power installations will be incidentally laid, which will greatly benefit the neighbouring country by making the valley of the Ottawa one of the principal manufacturing districts of the continent. And additionally so, since, as a general rule, the cost of water transportation of goods is about one third of that on railways.

Another advantage the waterway possesses, is the fact that the C. P. R. and other railways run contiguous to it for 380 miles of its length, which will be a source of mutual benefit to all. And, further, owing to the great improvements which have recently been made in engineering processes and machinery, whatever dredging, or excavating, etc., is required, can now be performed at much less cost than formerly.

I am indebted to Mr. McLeod Stewart, ex-Mayor of Ottawa, who is the head and front of this grand enterprise, for the fullest information, maps, plans, etc., of the scheme, which in these papers has been elaborately considered from every point of view by the Special Committee of the Senate of Canada, and by many others. Amongst the facts thus given concerning the undertaking as a whole, I gather that it has been most favourably contemplated by many eminent people for a long time past. These include Field Marshal Sir John Michel, formerly the Commander-in-Chief of Her Majesty's Forces in Canada; the Honourable Alexander Mackenzie, for some time Premier of Canada; Sir John Macdonald, G.C.B., late Premier of the Dominion, and the most eminent of Canada's statesmen; Sir William Van Horne, President of the Canadian Pacific Railway Company, and also numerous celebrated engineers, who have so reported upon the scheme as to leave no doubt whatever regarding the great benefit to be derived from the canal when in operation.

CHAPTER IV.

WESTWARD BOUND.—Montreal to Ottawa—History of the City—Its Parliamentary and other Public Buildings—Chaudière Falls—A Railway and Steamboat Centre—Its chief industries—Unique Wood Pulp Paper, etc., Works—Their River Motive Power—Gigantic Saw Mills—Their Peculiarities—Hints about Travelling Trunks—Summer Costume—On the road to Fort William—Aspect of the Country—A Sleeping Car—Arrangement and Method of Working—Courtesies of the Car—Heading for Lake Superior—Lovely Surroundings—"Striking" the Lake—Charms of Mountain and Sea and Sky—The Belles of Schreiber—"The *Chiel*" amongst them—Shades of Night again—Arrival at Fort William.



FTER having remained long enough in Montreal to become sufficiently acquainted with the city and its people, I thought I could not do better than begin to follow the track of the sun, as well as of the railway, until I had, step by step, reached the shores of the Pacific.

On a lovely July day, I therefore left at 9.30 by the C.P.R. for Ottawa, where, after a delightful run of 120 miles through a beautiful and well watered country, I arrived at one o'clock, just in time to see their Excellencies before they left on their farewell round of visits to the West. After this, I pursued my own course of investigation, carefully taking a preliminary survey of the city before treating in detail the objects of interest I thus discovered.

The original name of the village, out of which the city sprang, when founded in 1826, by Colonel By, R.E.,

was "Bytown." In 1834, its name was changed to the Indian one of *Ottawa*. In 1854, the population being 10,000, it had the title of "City" bestowed upon it by Parliament. In 1857, it was selected by the Queen as the Political Capital of Canada, Montreal retaining its position as the Commercial Metropolis. In 1859 the Parliament Buildings were commenced. In 1865 they were completed; and in 1866, Parliament met there for the first time, thus further adding to the population and importance of the place. The city itself is located at the junction of the Rideau and Gatineau rivers with the magnificent Ottawa, the lovely Chaudière Falls, which here interrupt the navigation of the latter, providing a valuable supply of water power for numerous saw mills and adjoining manufacturing establishments, which find ample scope for employment.

Like Quebec, Ottawa is divided into an upper and a lower town, the former of which stands on high ground, overlooking a wide expanse of country, distant mountains, flowing rivers, and undulating plains forming a beautifully diversified scene, which, from the top of the Houses of Parliament, produces a splendid panoramic effect. The city has broad, handsome, well paved and asphalted streets, the buildings which line them being frequently of a highly architectural and sometimes richly embellished nature. Many of the public edifices are high art productions, the head and front of them all being the Parliament Buildings, whose great beauty, but only partial extent, may be seen in the plate on page 53.

These Buildings, which, with their departmental offices, cost about 5,000,000 dollars, occupy three sides of a square on an elevated spot over-looking the river, and are very handsomely finished internally throughout.

The extensive grounds around them are beautifully laid out with flowers and trees which have a charming effect. Besides this, the views from any point are extremely picturesque, as the illustration to some extent clearly indicates. In addition to the buildings just referred to, there are others of great size and handsome appearance in the same locality, which are used for public purposes.

Amongst the chief natural attractions of Ottawa are the Chaudière Falls, the width of the greater of which is 200 feet, and its depth 40 feet, the wild, boiling, foaming nature of the water having originated the name. These falls possess some curious features which help to produce their extraordinary appearance in winter, as shown in the view on page 55, which also includes a small part of the lower town.

One of the most important characteristics in connection with the commercial life of Ottawa, and one, too, which makes it very easy of access from all parts of the country, is the fact that it is the centre of no less than seven railways, and also of steamboat facilities of a very useful order. Amongst other sources of revenue for the former, is the transportation of the enormous quantities of timber which are sawn out of the rough logs that float in rafts down the river and its tributaries from more or less distant forests.

A Canadian industry of ever increasing value is that of making excellent paper from wood pulp, the manufacture of which I had the pleasure of seeing at the immense establishment of Messrs. E. B. Eddy & Co., which is situated at a point where, upon crossing a bridge over the river immediately adjoining the Chaudière Falls, I passed from Ottawa, Ontario, into the city of Hull, Quebec. Upon calling at the Company's offices, I introduced myself to the pleasant and accom-

PARLIAMENT BUILDINGS, OTTAWA.

plished Mr. Rowley, who said "he was very pleased to see me," which must have been quite true, as he, two months afterwards, said exactly the same thing when I met him in Montreal. After obtaining permission to inspect the Works, I was handed over to one of his assistants, who most instructively showed me all over them, and explained the system of driving them by water power taken directly from the Ottawa, a method of producing cheap motive power in which the Canadians have naturally great experience, as their country possesses so many valuable rivers.

The skill displayed in the design and construction of Messrs. Eddy's works is clearly shown by the admirably arranged machinery of their interior, and also by the localisation of the establishment where power and materials can be most easily obtained.

In saw-mills generally, especially those of gigantic size, for which the Ottawa district is famous, there is an enormous amount of refuse cuttings of timber which are used instead of coal for firing boilers. Besides this, large quantities are sometimes otherwise burnt on the premises to prevent them from injuring the navigation of a river and making it unsightly. The quantity of timber required by Messrs. Eddy & Co. is prodigious, as it is employed not only in the manufacture of paper, but of many other things, including matches in inconceivable numbers, as will be clearly seen when it is stated that the average daily output of their works is as follows:—Paper, 45 to 50 tons; sulphite fibre and wood, 50 tons; paper bags, 500,000; indurated fibre ware, 800 articles; wooden ware, 3,000 pails and tubs; matches, 35,000,000, etc.

Here, however, we touch upon the borders of a system which, in countless ways, affects the cheapness

CHAUDIERE FALLS, OTTAWA, IN WINTER.

and excellence of every thing we can eat, drink, wear, or use in any possible form, both as regards its economy in manufacture and in transport. That system is known by the term *Mechanical Engineering*, which in infinite forms throughout the realms of science ministers to the wants of the human race. The leading features of this system chiefly consist of very admirable design and construction of the machinery itself, and also its skilful arrangement, so that in the manufacture of anything, the various processes and movements are so progressive, that, while the raw material enters one end of a workshop, it passes steadily onward until it reaches the other end in a finished state, without allowing a moment to be wasted in manipulation. In this manner the talent of the engineer is now-a-days wonderfully developed, in a way, too, which has repeatedly won the greatest admiration of those who have witnessed it.

The rapid increase during the last few years in the consumption of spruce and poplar for pulp cellulose used in the manufacture of paper, textile fabrics, and a thousand other articles, has built up a business not only on the banks of the Ottawa, but throughout the vast province of Ontario, and also in other regions of Canada, which seems likely to attain gigantic proportions before long. Three things, however, are necessary to accomplish this, namely, suitable wood, extensive water power, and suitable labour, all of which advantages richly exist in Ontario. Moreover, Canadian timber pulp is of a superior quality and greatly sought after by the manufacturers of the United States, in which country there is an increasing demand. Besides this, it is more popular in England than that of Norway and Sweden, and therefore commands a higher price.

Amongst Dean Bovey's valued introductions were

those to Mr. Collingwood Schreiber, the Deputy Minister for railways and canals, and to Dr. G. M. Dawson, C.M.G., etc., Director of the Geological Survey of Canada, and Mr. T. C. Keefer, C.E. The first named was so fully occupied at the time of my visit that I naturally felt inclined to retire at once; before being allowed to do so, however, he very kindly supplied me with the most authoritative information concerning his own departments.

I alighted upon Dr. Dawson at a happier time. Not only did he carefully show me round his beautiful museum, but most generously supplied me with much useful information. And all the more so, as the learned geologist is the foremost in his science in the Dominion. Dr. Dawson is not only the son of the late Principal of McGill University, but is one of the simplest and most genial of men. All highly talented scientists are, or ought to be so, as they are so continually brought into contact with the sometimes unfathomable marvels of the physical world that they may well feel like children playing with pebbles on the shore of a vast ocean of whose bounds they are ignorant.

With Mr. Keefer I came in for my usual good fortune, as he only came home from a long run to go away again, my visit fitting in between his trips for half an hour only. I thus saw very little of him. He, however, would not let me away before handing over to me as much engineering information as possible regarding the C.P.R., with which he was long professionally connected. To the three gentlemen named, I now express my cordial thanks for the valuable knowledge so kindly given to me, which at the proper places in this volume will be found worked in with the text.

Having, in the manner indicated, rapidly utilised

the official, topographical, and scientific resources of Ottawa, I thought it time to be off again on my travels, in the midst of glorious weather. My first two days in Montreal had been days of heat. This was immediately followed by thunder-storms and tropical rain, which cleared the air and made it delightfully cool and exquisitely transparent. After this, for weeks at a stretch, we had brilliant sunshine, which was quite a treat to one so long accustomed to the, too often, drizzle-fine-drizzle, drizzle-drizzle, tolerably fair, etc., British climate.

Now, how about the costume to suit Canadian weather, say from beginning of June to the end of September, as I found it, and also the box to carry it in? Well, as I was on a special mission to that country, and naturally wished to look as smart as possible, I purchased a new, admirably designed, and handsome "Saratoga" trunk of the regulation depth for going underneath ship's berths. Its weight, when loaded, was not too heavy for one man to carry, and here lies a secret many people do not seem to know. *One man* for a box of any size seems to be the rule at railway stations everywhere, and if a trunk is too large or too heavy for a porter to manage, he may drop it very roughly, and perhaps upside down, on the ground, to the imminent danger of the presentation home-made pots of jam, or bottles of pickles, surrounded perhaps by evening dresses, lovely hats, Indian shawls, etc., as some have had painful cause to know. Better, therefore, to have two handy trunks to carry your gear, than one unhandy, bad-language-producing, miniature warehouse, which is sure to get knocked about some time or other. In proof of these remarks, it may be added that my Saratoga was passed all over the Continent and home again practically uninjured.

My costumes were quite new, and chiefly consisted of a useful navy blue suit. A similarly made black coat and vest of rough woolly cloth for cold weather at sea. A long, grey waterproof coat. One pair of light grey, and one pair of darkish grey breeks, a black surtout, and evening dress. A plain braided blue cloth P. and O. style of cap for the sea, etc., a black felter, and a handsome, stylish, black and white straw hat, which I found absolutely invaluable. "*Shineys*," for any purpose, are worse than useless.

Thus attired, the "Happy Traveller" felt at ease, and at least fancied that he made favourable impressions wherever he went. The little things of life just mentioned frequently add quite as much to our felicity as those of apparently greater importance, and, as a careful student of details, as well as of generalities, I may be excused for referring to subjects which many people would have omitted.

On 9th July, at 6 p.m., I left Ottawa for Fort William, with a run of 878 miles before me. The evening was exquisitely beautiful, and as we rolled onwards to the West, leaving behind us the spires and towers and charming surroundings of the capital, the scene was truly one to be remembered.

The country, too, as it rose to view, was lovely, as we had the Ottawa river keeping us company for some time, with its long and broad stretches, in which could be seen immense quantities of logs, held in place by means of booms. In addition to this, smaller streams came into sight, also beautiful lakelets, and hills, and forests, and rugged rocks, etc., until 9.38, when we reached the important town of Pembroke. This is not only the centre of various substantial industries, but one, also, which commands a large

portion of the trade of the lumbering districts towards the north, the Ottawa being navigable for steamers some distance both above and below this point. Not only so, but by the presence of ample water power, and the saw-mills, etc., which are driven by it, little towns had sprung up here and there which in the near future will become greatly extended.

The shades of night had fallen upon us, and so, after standing outside the car as long as possible, and passing the time inside with much pleasure for the rest of the evening, I went to bed in the sleeping car, which here needs explanation in connection with the view shown on next page.

As will be clearly seen, the illustration expresses much in little space. In the foreground we have the seats luxuriously fitted and adorned as in a drawing-room, which, indeed, the car is by day, the slanting and tastefully ornamented upper portion of the sides forming the sleeping space by night.

When the retiring hour arrives, the car porter pulls down the slanting upper parts, and after putting everything in order, the beds are ready for use. The seats below are provided with fore and aft sliding extensions, which are kept underneath them during the day. These, at bed time, are pulled out and mattressed, &c., as above. Between the ends of each pair of berths is now placed a movable wooden partition which isolates them from each other, and besides this, handsome curtains are suspended from the brass rods overhead in such a way as to finally change the car into a series of most comfortable private bedrooms by night—the change being of a very striking nature.

In this department alone, the most advanced principles of beautiful design and construction are promi-

DRAWING ROOM AND SLEEPING CAR IN A CANADIAN PACIFIC TRANS-CONTINENTAL TRAIN.

nently observable, as there is not a pin, a screw, a rod, or anything else indeed, that has not to take its share in rapidly and effectively bringing about the desired results.

It may be asked what all the ladies and gentlemen who occupy this palatial hall by day, are doing while it is being thus transformed. Well, they have just to sit where they can until the operations are finished, and then taking off their boots, and taking out their night-dresses from their bags, or coming from their dressing-room in dressing-gowns, retire at once into privacy behind the curtains, and there unrobe. It may be added that the end door shown in the view, at which the conductor is trying to look picturesque, is only one out of many which allow free passage from end to end of the train, to which further reference is made in Chapter VIII.

The following sleeping-car stories come to me from Transatlantic sources. One one occasion a husband and wife had had a tiff, but after going to bed the former, not wishing to let the moon arise on their wrath, said to his wife three times, but unavailingly, "Mary, give me a kiss." At last one of the neighbouring gentlemen shouted in stentorian voice, "MARY, for *goodness* sake, GIVE HIM A KISS, and let us have *peace!*"

At another time the occupants of a similar car had been informed, before going to bed, that at an early hour in the morning a famous bridge would be passed which they ought to note. When the time arrived they all trimmed themselves and went outside to see it, but on returning to rest one of the ladies missed her bearings, and got into a gentleman's bed instead of her own, When *he* discovered this the fact was gently announced to the fair invader, who at once replied, "I am very

sorry, but as I do not intend to get up again, *you can go into mine!*"

The rising sun of next morning found us racing away from him at full speed. Another car transformation scene was soon afterwards enacted. Breakfast time arrived for hungry people. Lunch and dinner came on as usual, all very excellent meals, at 75 cents each. Lovely scenery and charming weather followed us all the way. We passed station after station with Indian names, such, for instance, as *Onaping, Metagama, Bicotasing, Nemegosenda, Missanabie*—where we met the east bound train—and so on. We passed admiring Indians with their tents, or "Teepees," in position, and also a few miners.

Onwards we whirled hour by hour until we "struck" Lake Superior at Heron Bay station, where we entered upon a scene of splendour which Sir William Van Horne well advised me to note. From this point forward, over many curves and bridges, the views of mountain, and lake, and sky, also the frequently picturesque and grand engineering features of the line, appeared in the most exquisite and never-to-be-forgotten beauty under the rays of the declining sun.

At 9.15 we reached Schreiber, an important divisional point of the C. P. R., where we remained ten minutes, and gave the inhabitants a treat. Out they came in numbers to see us at this far away point from city civilization. Ladies and gentlemen of all ranks. Mining folk in their every day costumes and complexions. Boys and girls and very young ladies, too, came out to look at and admire us while we were at the station.

The ladies of Schreiber were stylishly dressed in white, and seemed to be great objects of interest.

There were two amongst them, however, who especially attracted the amiable attention of the *Chiel.* They were fine handsome young women, but their hats were of such a curiously castellated flower-garden description that they almost took his breath away, and thus gave him a very good hint regarding the true reason why the United States Government passed an edict enjoining ladies to take off their head gear in public halls, etc. Dear young women, our eyes met from time to time on that memorable occasion, please, therefore, accept advice from one who greatly admires elegant taste in dress. Get simple hats suited to your own pretty costumes, and your charming persons will become a source of true admiration to those whose attentions are worth having. Please also remember that this advice, so kindly given to you is, at the same time, intended for very many whose homes are some thousands of miles distant from yours, and who in such things ought to know better.

Darkness fell upon us again, but, as in these splendid cars, where society of every kind may be had from end to end of a train, if desired, the time passed pleasantly away until, at 2.20 a.m., we rolled smoothly into Fort William, and I at once went to the excellent *Kaministiquia* hotel of good and still pleasantly remembered Mrs. Smith, and slept soundly until breakfast time.

As we are now not far from the western borders of Ontario, it may be well, for at least the sake of variety, to give in the next chapter a few remarks upon this vast province, full information concerning which has been most kindly supplied to me by the Hon. John Dryden, the Hon. Sydney Fisher, and other Government officials.

CHAPTER V.

PROVINCE OF ONTARIO.—Its Immense Proportions—Geographical Position — Vast Water Transportation Resources — Peculiarities of the Province—The Great Lakes—Early days in Northern Ontario—Its Physical Features and Resources—Marvels of the Minor Lakes—A Gold-Mine Story—A new Era for the District—Difficulties and Triumphs of the Early Colonists—Qualities necessary to obtain Success—Opinions of Settlers — Southern Ontario — Guelph Agricultural College—Its Immense Advantages—Experimental Farms and their Uses — Farming an advanced Practical Science — Timber Industry—The Trees of Canada—Bee-Hive Hamilton—Fruit Growing on a Gigantic Scale—Bush Fires—Their Causes—Government Protection of Forests.

THE Province of Ontario constitutes, from the length of time it has been practically known, one of the oldest in Canada, and forming, as it does, the very heart of the Dominion, its progress, wealth, and population entitle it to be recognised as the most important of them all. Its area is 220,000 square miles, or 78,000 more than the whole of Great Britain and Ireland, and only 4,000 less than that of France, its greatest length and breadth being respectively 1,000 and 750 miles.

Ontario has other advantages besides vast extent of territory, since its geographical position brings its southern limits into close connection with the excellent water transportation of the Great Lakes, which form in themselves the finest system of inland navigation in the world. Some idea of the extent of this traffic may be formed from what has already been said concerning it in Chapter III.

With these facts in view, it will be clearly seen that the position of Ontario gives her many of the advantages of a maritime country, including remarkable natural facilities for the cheap distribution of her products to the markets of the world.

Primarily, it will be advisable to divide this province into two parts—Northern, and Southern Ontario—firstly, because the latter half constitutes the settled or agricultural portion; and secondly, on account of the distinct difference which exists between their physical characteristics. Generally speaking, the latter territory is more or less undulating, its soil possessing a natural fertility unexcelled for richness. On one hand the visitor sees well cultivated 150 to 200 acre farms, comfortable and sometimes handsomely designed timber-built residences, and spacious farm buildings, which indicate that their owners have had at least a fair share of prosperity. Cities and towns and villages lie all around, some of them being named London, Edinburgh, Glasgow, Ayr, Dumfries, Bothwell, &c.

There is an air of peacefulness and productiveness about the land, brilliant and steady day by day sunshine and clearness of sky, and a luxuriance of vegetation, which means very much in reality to the farmer.

As the great lakes form such a prominently striking feature of Southern Ontario, it may be well to give the

following table, which will show at a glance their leading proportions.

The Great Lakes.	Length miles.	Breadth miles.	Depth feet.	Elevation feet.	Area in sq. miles.
Superior	420	170	1,000	600	31,500
Michigan	320	70	700	576	22,400
Huron	280	105	1,000	574	21,000
Erie	240	57	200	565	9,000
Ontario	180	55	600	235	5,400

Northern Ontario differs very materially from the district just referred to, but then, when one has to deal with such a large province, what else can be expected? Here, it may be said, that the ruling industries are those chiefly connected with the mine and the forest.

In early days the pioneers began by felling trees and preparing the land for the plough, but they soon discovered that the country underwent a complete change in its character. Instead of the continuous stretch of agricultural land they were accustomed to see in the south, they found an almost impenetrable forest with lakes and rivers, and hills and rocks in profusion, and so disappointed were these prospective settlers with what they thus encountered that they soon abandoned the territory.

In course of time the lumberman came upon the scene, and as he foresaw a large amount of profitable employment, he immediately settled down and commenced operations. So rapidly and so prosperously were these conducted that towns and villages sprung up which were largely devoted to the timber trade, including sawmilling and other kindred occupations. A certain amount of population naturally followed, but as the timber industry did not seem capable of sufficient

expansion, many preferred the fertile plains of Manitoba as a place of residence. Thus it happens that to-day a large portion of Northern Ontario is only sparingly populated, and its towns far apart. While on the one hand, therefore, the C. P. R. has greatly opened out and improved the country adjoining it, it may be said, on the other hand, that between the prosperous belt thus created and Hudson's Bay, this part of Canada was, until recently, little better known than it was 60 or 70 years ago, the unexplored portion referred to being equal in extent to one half of the entire province. So valuable, however, are its resources now proving in other directions than those originally contemplated, that the question of its development in relation to the future prosperity of the province as a whole, is becoming one of ever-increasing importance.

There is something about the appearance of Northern Ontario, even to passengers by rail, which indicates severe volcanic action in the ages of the past. The country, although only moderately hilly, is frequently broken up by ridges of rock which often rise abruptly out of lake basins. In many places it is still covered with dense forests, but one of its most remarkable features is the endless number and variety of its minor lakes, which exist in many thousands, and range in size from those of fully 100 miles in length to rock basin lakelets of small area. They generally show a tendency to run in groups, having, as geologists inform us, been excavated by the action of glaciers. More than this, so obliging had Nature been to the coming race of settlers, that most of these sheets of water have boat navigable channels between them, which to those traversing the district are a very great convenience.

A peculiar feature of many of these lakes, when of

large size, is the most extraordinary manner in which they are embellished with islands of every conceivable shape and dimension, sometimes, too, of great beauty, and richly wooded. As no atlas, however costly, could even fairly show these in detail, reference has had to be made to the large scale and elaborate district maps of the government offices.

For a long time Northern Ontario was considered a worthless region of water and rock. It was deeply regretted by many that it was not a farming country like that of the south, but, unknown to all, there was a good time coming which is now beginning to show itself.

There is a story told of a New York manufacturer who, for the sake of economy, built a new establishment on the bank of a western river. Soon afterwards, a terrible flood swept the works completely away, to the great distress of the owner, whose grief was, however, soon changed into joy when he discovered that his premises had been standing upon what was a now revealed gold mine! So is it now with Northern Ontario, at least regarding the once neglected and apparently unworkable portions just noted. A new era seems to have arisen, light is beginning to dawn in regions yet untouched, but the manner in which that light is to be further revealed remains to be told.

By intercourse with various people throughout the land, I came to know very much concerning the early troubles, difficulties, and successes of those who either were native Canadians, or had been importations from the Old Country. Regarding the latter, there was but one opinion, namely, that, quite apart from their frequent physical disqualifications for the work of farming, there was generally such a want of even rudimentary knowledge of the conditions under which agriculture

could alone be profitably carried out, that disappointment and failure were too often the result. Return to the homes of their youth followed, and, instead of blaming themselves, as in all fairness they should have done, Canada herself received the discredit.

The cry of the disgusted ones was—"too much hard work"—"things would not grow"—"frozen up all the winter"—"no money to be made"—"wished they had not gone," and so on. Instead of taking home a goodly report of the land—like the bearers of the Bunch of Grapes—their statements took the form of mourning, lamentation, and woe to such an extent, that people here became afraid to venture into such a supposed wilderness of ice, and snow, and desert land, preferring rather to bear the ills they knew of than fly to those that might in more aggravated form be waiting for them.

The people I met repeatedly told me of all this. They told me how their fathers, and uncles, and sons, and brothers, and sisters, cousins, and aunts, and they themselves too, had got along so nicely, after, of course, their preliminary hardships and difficulties had been overcome. They told me about their comfortable homes—their good neighbours—their winter amusements—their summer occupations, one of which, for a short period only in certain places, was in battling with the mosquitoes, and finally they told me how they had successfully repelled those insects.

They further said they were always glad to see people from the Old Country settling down amongst them who were willing to work, and had at least some idea of how that work should be done, instead of spending their money and time uselessly and grumblingly, and giving the country a bad name which it did not deserve. In this way, my dear good friends and I

chatted merrily and profitably as we smoothly rolled along the C. P. R., the "Chiel," all the time, mentally noting their remarks for reproduction in these pages, which he hopes will remind many of his much valued interviews with them on the main line and elsewhere. For all these favours let me here most heartily thank those who in this manner so much contributed to my happiness and instruction in things Canadian.

So widespread had been the want of the knowledge referred to, that in the year 1874, an Agricultural College and Experimental Farm were established at Guelph by the Provincial Government, under the administrative control of the Minister of Agriculture. This College, a view of one of the main buildings of which is given on p. 73, is near Toronto, in the midst of an excellent farming district, and is intended for the special purpose of giving a practical and scientific education to the sons of farmers and others. The farm consists of about 550 acres of land, and is fitted with various buildings, and every kind of appliance for successfully carrying out its purposes, namely, that of giving to the youths who attend it, a thorough and practical knowledge of every branch of agriculture, especially those which are best adapted for profitable application in the province, according to its conditions of climate and soil. It is conducted by an able staff of professors, and instructors, and the fees are exceedingly moderate.

Some idea may be formed of the scope of the Institution from the fact that, besides the ordinary routine of commercial education, the classes include instruction in the Natural Sciences, such as Physics, Chemistry, Geology, Botany, Zoology, Entomology, Bacteriology, etc.; in agriculture and farming, everything that relates to live stock, poultry, agriculture,

dairying, horticulture, veterinary science, and economics. In the Experimental department everything is taught that relates to field experiments, soil physics, feeding of animals, experiments with poultry, etc., and the application of the natural sciences already mentioned to practical farm work. Indeed, everything which can in any way turn the science of agriculture into one of the most advanced of the age, and a source of pleasure and profit to those who wish to adopt it as a profession, as well as to farmers who desire to know experimentally the capabilities of their estates.

In the various Provinces these Experimental farms have not only been extensively introduced on similar lines, but most usefully employed for the benefit of all, thus enabling settlers to obtain the highest results from their land with some degree of certainty.

So far as field work at Guelph is concerned, it may be mentioned that about 50 acres of land divided systematically into fully 2,000 plots of specified area, are used for agricultural experiments upon various kinds of grain, root, tuber, hay, fodder, and miscellaneous crops, under the influence of artificial and other manures. Methods, too, of cultivation, selection of seed, dates of seeding, &c., are all treated with the greatest care, and for several years in succession, in order to secure strictly accurate and trustworthy results. Results, too, which not only indicate the seeds most suitable for the soil of a province, but also the best manner of treating them in accordance with their surroundings.

The Guelph experiments deal with the crops grown upon fully nine-tenths of the cultivated land of Ontario, or over 8,000,000 acres, and on their agency alone much of the prosperity of the province may be said to depend.

Taking all these facts into consideration, it will be

MAIN BUILDINGS OF
ONTARIO AGRICULTURAL COLLEGE AT GUELPH.

seen that without the valuable aid of science and advanced practice combined to help one, the farming of to-day in Canada—which differs very much from that of the British Isles—would be shorn of a great deal of its prosperity to those who engage in it, when otherwise success might easily have been assured. Inexpensive as Guelph training certainly is, it is necessary for a student to have at least a small amount of capital to help him when there. For those, however, who have no means, there is a very practical system in use which has led many farmers to well-merited success; to this, however, we shall refer in another chapter.

As the felling, squaring, and sawing into planks, &c., of timber, is one of the great industries of Ontario, a few remarks on the subject may here be appropriately introduced. Before a tree can be manipulated in a sawmill, or even floated down a river, it must necessarily be cut down in the forest, and here, strange to say, the manual practice of very early days maintains its position in spite of the improved mechanical processes which have been introduced from time to time. Can it be imagined that, with these machines in view, the barbarous method of cutting down trees with the axe or cross-cut saw is still in use, as it was in Australia fifty years ago? Yet so it is.

During a conversation I had with the manager of the Hastings sawmills at Vancouver as I went over his splendid works, he informed me that owing to the trees growing so close to each other, the men had no space to work the machines I mentioned, and so his firm, as well as others, had to employ manual labour instead, the trees being notched on one side with the axe and then sawn through from the other side, or sawn or chopped altogether from both sides in such a way as to make

them fall in any required direction. He also told me that it was astonishing the amount of work which, even with these primitive tools, good hands could perform.

Originally, Ontario was so entirely covered with trees that the pioneers had to cut them down, pull out, or blast out the roots, and burn the refuse, in order to prepare a farm for themselves, just as it is to-day in many places, unless people can afford to purchase cleared land. Owing to the immense farming operations which have for a long time been going on in Southern Ontario, the original forests have now very largely disappeared. The Northern part of the province, however, is still a vast tree-covered wilderness, as one may discover when passing through it.

The trees chiefly to be found in this region are of the white pine and spruce orders, the latter of which is now used in enormous quantities in the manufacture of wood pulp and paper, as previously mentioned. Besides these, there are various kinds of hard wood trees, which not only supply the domestic consumption, but contribute largely to the exports of the province. Forests on the Crown lands are leased to lumbermen by the Government, the area covered by lease being now about 22,000 square miles, hence it will be seen that the revenue derived from this source alone is very great.

For logging or tree-felling, etc., operations, winter is the best period, as advantage is thus taken of the snow and ice, which form splendid means of sometimes sliding the timber by mere gravity from a forest to the adjacent stream. As, however, all the northern rivers of Ontario flow towards Hudson's Bay, cheaply constructed logging railways are used which greatly facilitate the transport of trees from point to point. These lines, we may add, of a narrow gauge and very portable description, are

now very extensively employed in various parts of the world for all purposes.

Amongst the numerous industrial centres of the Province of Ontario no place perhaps is so much of a Bee Hive as the city of Hamilton, which is situated at the western end of Lake Ontario. Quite apart from its lovely water and other surroundings, it owes its attractiveness to many causes, chief amongst which are its handsome tree-bordered streets, its numerous fine public buildings and private residences, and, commercially speaking, to the fact that it is the centre of a multitude of manufacturing establishments which have steadily increased its population to fully 50,000, and enhanced its wealth in an extraordinary degree. The spires of Hamilton may be discerned forty miles off, and as the city stands on a plain, covered in all directions with prosperous fruit, etc., farms and pretty villages, some idea may be formed of the scene when viewed from the neighbouring "mountain."

To many it may appear strange that in a climate supposed to be so cold in winter as the adjacent Niagara district, fruit growing on a gigantic scale could be carried on, and yet so it is. Not only are grapes, peaches, apples, plums, etc., produced in inconceivable quantities, but so excellent are they that at the World's Columbian Exhibition in Chicago, the fruit of this locality secured the greatest number of awards, and succeeded in obtaining a position fully 30 per cent. higher in appearance and quality than that of any other country or state. This, however, is due to the fact that the soil is excellent, and that proximity to the Great Lakes helps to render the climate very temperate, and consequently well-suited to the growth even of tender fruits such as peaches and grapes, which here grow in the open field.

During the journey from Montreal to the Pacific coast we passed over about 1,500 miles of line where, on either one or both sides of it, were to be seen the blackened remains of splendid forests which at one time had not only beautified the land, but which should have proved a valuable source of revenue to the country. Their stumps and bodies still stand in gaunt, dreary, blackened unsightliness for scores of miles together, generally as bare poles without a single branch left upon them, extending for some distance back from the line, and even far up a mountain side, until there were no more left to burn. Very frequently we had for variety the trunks of great cedars, whose rotten cores had smouldered for weeks, until reduced to mere shells which were riddled with holes in the most fantastic manner—picturesque, sure enough, but in grim Gustave Doré style.

The beautiful trees of Canada are always a source of admiration as there are so many fine specimens of them, the silver birch and the lordly pine, amongst others, making an admirable contrast. I, therefore, could not refrain from painfully comparing the loveliness of those which were left untouched by fire with the ghostly remains of millions of others which so continuously rose to view.

A bush fire, especially when fanned by a strong wind, is an appalling spectacle. The frantic rush of multitudes of terrified animals is prodigious, many of them being overtaken by the flames and burnt alive. The heat is so intense over a large area, and the speed and volume of the flames so great, that everything falls before them, the usual fire guard space frequently not being sufficient to prevent them from leaping over it and destroying homesteads and everything that lies in the way. On the

American continent these fires have often been of such a dreadful and wide sweeping nature, that the utmost care is usually taken to prevent the possibility of their recurrence, but even this may often be of no avail.

You ask what are the causes of this wide-spread and national evil? Well, with the light of Australian bush life around me, combined with what I learnt in the Far West, I should say—chiefly carelessness. In the dry months people set fire to the withered grass so that a fresh green crop may spring up soon afterwards, and then, sometimes, the flames getting beyond their control, devastate a large portion of a province, and destroy much valuable house property, as it was with the original Vancouver.

Another cause is produced by wandering camping parties leaving their fires unextinguished — the wind doing the rest. The Dominion Government, however, has recently been endeavouring to rectify this state of things, which we hope will stop the evil.

Fortunately, I saw the whole country on the outward trip under a charmingly clear sky, and in all its loveliness, down to Vancouver and Victoria. Before leaving the latter, however, bush fires set in on the mainland, and also on Vancouver Island, making their vicious effects felt all round. The heavens were . . . the scenery was . . . but here, in the German style, I say, "Ach!! ve vill tell you more ven ve *come* there—laiter on!"

CHAPTER VI.

ONTARIO FURTHER CONSIDERED.—Fort William—Grain Elevators—C. P. R. Lake Route—"Central Time"—Twenty-four hour System—Good Friends in the Train—Rat Portage—Glacial effects on the Land—Wondrous Lake of the Woods—Its innumerable Islands—Country honey-combed with Lakes and Waterways—Prosperity of the District—Immense Water Power for general Purposes—How obtained—Action of Turbines—Great Hydraulic Installations at Lachine and Chamblis—Lake of the Woods Flour Milling Works—Gold Reduction Works—Gold Mining of the District—Its great Future—Boat and Canoe Transportation—The Muskoka Region.

IMMEDIATELY after arrival at Fort William, as previously mentioned, I enjoyed a good sleep at the Kaministiquia Hotel. When breakfast was over, I visited the C. P. R. people of the town to see what they had to say about it, and then went into Port Arthur, three miles off. Subsequently, I roamed about Fort William, and after scrutinising the town, and also its very ambitious looking public buildings, went to see a splendid set of new grain elevators of the most improved design, just approaching completion, the construction of which was kindly explained by the engineer of the works.

The view on page 81 clearly illustrates externally

three of the elevators which, on Transatlantic territory, are very extensively employed, firstly, as colossal storehouses for the grain of the district, and then as rapid distributors of the same, either for home use, or for transport to distant climes. The process is as follows:—

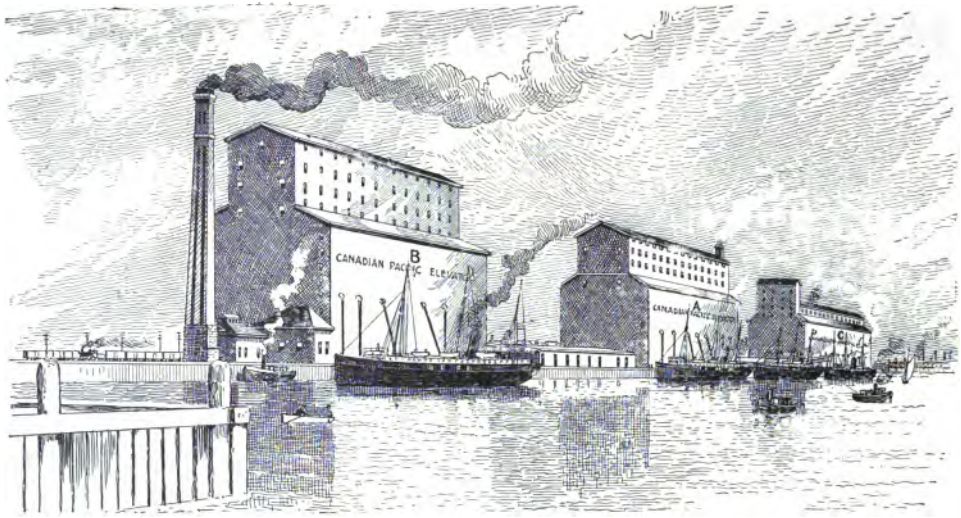
The grain-laden cars, upon coming alongside of the elevator, have their contents rapidly transferred by means of endless chains of buckets, or in other ways, to the adjacent floor of the building, where, by means of broad leather belts driven by machinery, the grain is conveyed at once to any part of the premises to await distribution. This is finally accomplished by allowing it to pass down outside shoots directly into the wagons beneath, or into the hold of a vessel lying alongside.

After carefully studying this very promising town and its surroundings, I eventually concluded that before long, when the trade of the locality expanded sufficiently, Fort William and Port Arthur would become one great and beautiful inland seaport, which the prosperity of the district seemed fully to foreshadow.

The most striking features were of course the ocean lake, with its fine coast scenery, excellent harbour, and also the navigable Kaministiquia river, which is a most useful adjunct to the town.

The *Lake route* by the C. P. R. to Fort William, is by means of a fleet of handsome steamers which make Owen Sound on Georgian Bay their eastern point of arrival and departure. This, to many, is a very pleasant change during a long run by rail, if not sometimes a matter of necessity.

During Atlantic voyages we have to alter our watches so many minutes every day at noon to suit the longitude, but on crossing the Transatlantic Continent we found that there were convenient points on the route, between



CANADIAN PACIFIC RAILWAY COMPANY'S GRAIN ELEVATORS AT FORT WILLIAM.

which the time remained steady until the next change was made. For instance, between Montreal and Fort William—a distance of 998 miles—"Eastern time" is maintained throughout, but between the latter and Brandon, or 559 miles, "Central time" reigns supreme. From Brandon to Laggan, or 823 miles, "Mountain time" holds good, and finally, from Laggan to Vancouver, 526 miles, "Pacific time" is the only recognised standard. Owing to these regulations, we had, of course, on the westward run to alter our watches one hour at each of the places named so as to be astronomically *back* to date. Similarly, however, we were enabled to regain our lost time on the return trip. Another notable horological feature of the line is the adoption of the 24 hour system between Fort William and Vancouver, so as to avoid the inconvenient and sometimes misleading "a. m." and "p. m." The 12 hours system, however, is preferred by those accustomed to it.

After very pleasantly surveying the Fort William district, I left in the afternoon for Rat Portage, with the object of studying the peculiarities of that extraordinary locality. The west bound lake steamer train arrived at 3.30 o'clock, and after stopping ten minutes, left at 2.40, which would have seemed impossible but for the reasons just given. Soon after we started, I became acquainted with Mrs. Alexander, of Calgary, and her four daughters who had come from Toronto, and were homeward bound.

Life is too short and uncertain for men and women to coil themselves up like cats, and thus prevent their own light and happiness from shining upon others, especially upon people they meet when travelling, who, as a rule, are so accessible, without formal introductions, to those who have honest expressions, and at least pleasant manners. As has been well said:

A little word in kindness spoken,
A motion, or a tear,
Has often healed a heart that's broken.
And made a friend sincere.

A word, a look, has crushed to earth
Full many a budding flower,
Which, had a smile but owned its birth,
Would bless life's darkest hour.

Then deem it not an idle thing
A pleasant word to speak;
The face you wear, the thoughts you bring
A heart may heal or break.

Facts which the Glum Grums and Squirmies of society either do not know, or do not care to know, and therefore miss much that would brighten their miserable existences.

After studying the social possibilities of the ladies just named, I made a casual remark to one of them which produced the happiest effects. 'Pon my wor-r-d! they *were* nice people, even when exposed to my usual riddling treatment when in search of information. I revealed to them my antecedents, and also the object of my visit to their land, and so delightful was our conversation, that I have had the honour of retaining their friendship ever since. They told me their names too, and these were Effie, Elma, Irene, and Ottilla, which may give a useful hint to some of my readers. They told me everything I liked to ask them, in joyous style, and so we rapidly became like old friends as we followed the sun in our house on wheels.

I have referred somewhat fully to this family because our charming association, even for such a short period, provides a key to much that many reserved and sometimes frigid people unconsciously deprive themselves of

when on a tour. What a pleasure it is, from an all round point of view, to be thus amiably associated with those who, although total strangers to us at first, may, when treated courteously, become our best friends. To do this successfully, however, it is advisable to cultivate those graces which win at sight, and also the study of character, which is a valuable accomplishment, and prevents mistakes from being made.

Into the future city of Rat Portage our train smoothly rolled very early in the morning, after passing through 293 miles of pretty, well-wooded, and beautifully watered country. Soon after I went to bed the rain came down in deluges, accompanied by an awful thunderstorm, which freshened and greatly improved the appearance of the country.

I was well advised to call here, because the locality is the centre of an important and prosperous region in which are so developed numerous thriving sawmilling, mining, wood pulp milling, and fishing, etc., industries, that this once primitive looking town was now rapidly extending and improving in many ways on the most modern lines. Formerly, it was a trading post of the Hudson's Bay Company. In early C. P. R. times it was merely a railway constructor's camp; now, however, the population is fully 5,000.

Rat Portage is not only a most interesting place in itself, but immediately adjoins one of the most wonderful lakes in the world, both in size and on account of its extraordinary formation. Some idea of this may be gathered from the fact that the Lake of the Woods has an area of 3,000 square miles, and contains about 12,000 islets, as Mr. Deacon, my accomplished local C.E. informant, told me. To have doubted this gentleman's word might have caused him to ask me to count them

for myself, which would have been an impossibility. And why should I not have believed him when the geologists inform us that by means of the playful freaks and frolics of the Forces of Nature in days of yore, not only do the "Thousand Isles" of the St. Lawrence really number 1,700, but the vast Huronic Arm named Georgian Bay contains no less than about *30,000 islands*, which is a Government statement.

Many of these are of rock formation, and nearly all of them are more or less richly wooded. To those only accustomed to the outlines of ordinary lakes, this Lake of the Woods must provide much food for reflection, since not only are the islands contained in it of the most fantastic shapes, but its own outline is of such a wildly irregular nature that one is lost in astonishment whilst contemplating the causes which led to such extraordinary results. And not only so, but a vast area of the adjacent territory is simply honey-combed with chains of lakes and lakelets more or less connected with each other. Regarding these, the Rev. R. F. Winter, of Liverpool, has told me much of a most interesting nature concerning the manner in which he and parties of emigrants placed under his care had, in pre-C. P. R. and also in later times, frequently traversed the country, and found them most useful.

There are no maps in ordinary use which can give anything but a very faint idea of this wonderful region, and had it not been for the kindness of the Dominion Government officials, in providing me with copies of their own very large scale plans in sections, I should not have known what I know now of the district.

So attractive is this most picturesque lake that it has become quite a fashionable resort for large numbers of people who make its islands and shores a place of resi-

dence during the summer months, an excellent service of steamers proving most useful.

Rat Portage owes its prosperity to various causes which are by no means difficult to discover, as its industrial operations, previously mentioned, are so economically worked by means of water-power which the lake abundantly supplies. Its outlet into the adjacent Winnipeg river enables this to be so conveniently accomplished as to produce, if required, a water-power installation of stupendous magnitude. This exquisitely beautiful and cheap system of developing energy requires a little explanation, as it is such a popular method of utilising one of the *waste* forces of Nature.

In olden times, water-wheels of various kinds were extensively used wherever running water could be conveniently obtained. In modern days, however, these wheels have been largely superseded by the *Turbine*, which has been so improved that it has now become one of the most valuable means of generating power for machinery driving of every description. Not only is it a highly efficient source of energy for application to immediately adjoining works, but, what is of infinitely more importance, it can be widely employed in driving dynamos, and thus creating *electrical* motive power for transmission, as at Niagara, to places hundreds of miles distant from the power-house, if required. These facts alone will indicate the scope of this wondrous engine in modernised practice.

Now, how about its scientific principles? Briefly, it may be said that its operation is invisible, the action of the wind, however, on the sails of a wind-wheel, or on the vanes of some chimney-top ventilators, will help to explain the method of applying fluid force to it. The weight of a column of fresh water 12 inches high and

one square inch area is ·434 pound, say half a-pound approximately, hence, with a column of fluid 100 feet in height resting upon the whole of the exposed angular vane surface of a turbine, and producing a pressure of 43·4 pounds per square inch, it is easy to see that considerable power can thus be given out, especially when aided by the application of high science in design.

Another vital point in this engine is its extreme compactness and simplicity, and economy in maintenance. Where only low heads of water are obtainable, the turbine wheels have, of course, to be of comparatively large size, as the fluid pressure is very small, but where, as in mountain regions, a head of from 100 to upwards of 1,000 feet may be had, it is astonishing the amount of energy which can be given out by a wheel of the most insignificant proportions, either of the vertical or of the horizontal type, and resting, too, upon the simplest foundations and with surroundings of a very inexpensive nature. Thus presenting a very striking contrast to a steam engine of the same power, with its complicated and costly array of cylinders, valves, shafts, rods, levers, boilers, etc., and all connections, not to mention coal consumption and other sources of expenditure.

One of the most interesting applications of the turbine on a colossal scale is to be found at the Niagara Falls electrical power-house, which I had the honour of being very carefully shown over by that prince of American engineers — Dr. Coleman Sellers — who is engineer-in-chief of the works, and to whose various improvements and vigilant care so much of their financial success is due.

This Power House was originally intended to contain ten 5,000 horse-power dynamos, each of which is driven by a vertical duplex turbine only five feet in diameter,

placed at the bottom of a well supplied with water from the adjacent river, which gives a head of 178 feet. Recently, however, the installation has been more than doubled, to enable it to meet the requirements of the surrounding country. As I gazed around at the enormous and swiftly running dynamos, and peered into the depths of one of the pits containing a turbine, and heard its massive rythmical impulses, it seemed to me that, in marvellously small area, the 5,000 water horses below were doing something the outer world might like to know about. Dr. Sellers was quite as pleased to give me all the information possible as I was to receive it, and took care to let me know that some small machinery of *his* special design at one end of the vast building had done more good work than the whole of a very costly installation at the similar establishment of another American city which had been otherwise designed.

At Lachine and Chamblis, near Montreal, I took two trips with the American Institution of Electrical Engineers, which was visiting that city. On one occasion we paid a visit to the new Lachine Power House, of 1,000 feet in length, which was fitted with splendid turbine driven electrical machinery, the head, in this case being only 12 feet, owing to the peculiar formation of the bed of the neighbouring river Ottawa at that point. Here, however, my good friend Mr. W. McLea Walbank, the Engineer-in-Chief, had shown great skill in dealing successfully with a difficult problem, and all the more so on account of the ice obstacles which were likely to arise in winter owing to the shallowness of the water.

During our visit to Chamblis, on the river Richelieu, we came in again for some splendid turbine and dynamo machinery which had been only recently constructed.

What interested me most, however, by way of variety, was the clever way in which the engineers of the works had turned a broad though shallow and rapid but high-banked river, utterly useless as it stood, into a splendid source of motive power on a large scale. This was effected by means of a dam which had been built across the river in such a way as to raise its level 28 feet. Thus forming an extensive deep water area which could be very usefully employed in connection with a large electrical installation for supplying motive power for the surrounding country.

With all these facts in view, it will not be difficult to see how the rapid advancement of Rat Portage can be easily accomplished, when it has beside it a lake so immense, and with a water fall which can be used with great effect in the manner described. It may be added, that I have occupied so much space with the description of this system of machinery because, in its present perfected state, it can be used so economically, comprehensively, and effectively in any locality where the magnificent and formerly *Waste Force of Nature* produced by rivers and lakes can be suitably obtained, which every reader ought to know about.

Two of the most instructive adjacent objects of interest were the Lake of the Woods Flour Milling Works, and also the Reduction Works for gold ores at Keewatin. These establishments were both new, and not only built in handsome style, but fitted internally with the best machinery and the most economical systems of manufacture, the former being considered the largest of its kind in Canada. The other works indicated the presence of valuable gold mines to which we shall now direct attention.

Although 1291 miles from Montreal, it may be well

to state here that we are still within the bounds of Northern Ontario, and therefore it will be advisable to say a few words about its mining resources before leaving this wonderful province. For many years I paid no attention whatever to the mining industry, as its schemes were, in many cases, too "*wild catty*." People said one thing about it and meant another, or led you to imagine something which was never clearly expressed. When, however, I went to the mining regions of Canada, and saw things for myself, and heard much about them from the most trustworthy people who were practically engaged in them, I then considered the science well worth attention, as one of the most important of the age, and so I have now the pleasure of referring to another of the leading features of the province around which so many of my happiest memories tenaciously cling.

It is to the development of her mineral wealth more than to anything else that Ontario is looking at the present time, not by any means, however, that her greatest expansion, agriculturally, has in any sense been reached. The value of some of the northern sections as a field for farming are now attracting more attention than ever, while in the southern portions still brighter prospects are in store for the settlers. Nevertheless, future advancement is likely to depend on mining quite as much as, if not more, than on agriculture.

The mineral resources of Ontario are widely spread, varied in character, and cover almost the entire list of useful minerals. Examination even now shows that they are of almost unlimited extent and value, and that the prospector has a boundless field of operation before him. Experts acquainted with the mining camps of the world have expressed their opinion that the gold regions of Ontario far surpass those of the Transvaal in richness

THE THOUSAND ISLES OF THE ST. LAWRENCE.

and extent, and may be worked more profitably, for nowhere throughout the globe can such operations be carried on at less expense than in the Ontario gold fields. It is chiefly to gold mining, therefore, that the attention of this portion of the province is now directed, and already enough has been done to place the successful development of that industry beyond a doubt.

During my stay at Rat Portage I had various opportunities of learning this, and also, that notwithstanding the unfavourable reports of one of the surveyors who had carefully explored this region, several mines had actually been so passed through the experimental stages as to be now in a prosperous condition. Of course, it must be borne in mind that the cost of working is very small owing to the abundance of water power previously mentioned, and also to the vast network of lakes and water ways which stretch so far in every direction as to render the presence of roads and railways not nearly so imperative as they would otherwise have been. Many of the mines and mining properties are right on the water's edge, and hence can easily be reached by boat, etc., but where assistance in other respects has been found necessary, the Government has proved a most able helper.

The Province of Ontario is not only rich commercially, but very beautiful from a scenic point of view, owing to the sometimes extraordinarily diversified nature of the country. To a remarkable extent is this the case at The Thousand Isles of the St. Lawrence, and in the Muskoka regions adjoining Georgian Bay. The latter have an altitude of several hundred feet above Lake Huron, and contain about 800 lakes of all shapes and sizes, most of which are curiously connected with each other by rivers and water passages, and filled more or less with islands, and lined with bold promontories, as

STEAM YACHT "CAPTAIN VISGER.

may be gathered from the view on p. 91 of the Thousand Isles, which some parts of this region much resemble.

The principal of these lakes are named *Muskoka*, *Rousseau*, and *Joseph*, whose marvellously indented coast-lines cover a distance of several hundreds of miles, and embrace fully 4,000 islands, frequently of a tortuous, rugged, wooded, and otherwise most attractive nature. So popular is the locality that hotels are very numerous, their rates ranging from one to two dollars a day. Every opportunity is also given to visitors for seeing the country, by means of carefully selected railway and steamboat routes, or by vessels which may be hired for general exploration purposes. Abundant fishing and shooting can also be had. The view of the steam yacht, *Captain Visger*, on page 93 will give a good idea of the charming manner in which these lakes and waterways, and indeed, all others, may be traversed by pleasure parties during the summer months.

When the time came for my departure from Rat Portage, I again prepared to move westward another stage of 133 miles to Winnipeg, and soon afterwards was out again on the main line, as before, with the intention of entering another province of world-wide reputation, though not by any means so large as the one I was leaving, but to this, reference will be made in the next chapter.

CHAPTER VII.

PROVINCE OF MANITOBA.—Rat Portage crowds for Winnipeg Exh bition—Curious Difficulty—Entrance to the great Prairie—"Western Canada"—Its Extent and Resources—Grain producing Powers—Climate—Systematic Division of the Land—Manitoba and its Peculiarities—Rapid increase of Population—The Prairie for 800 miles—An Ancient Lake, the cause of its great Fertility—Mistaken ideas concerning the Province—As it is in Winter and Spring—Its great popularity—Winnipeg during the Exhibition—Another unexpected Difficulty—"Give you a *Cot* with 20 others, Sir?"—Did better—Origin of Winnipeg—Rapid Extension—Great Future—How some Cities have grown.

S previously mentioned, I went to Rat Portage Station with the intention of starting at 13 o'clock for Winnipeg, and as the Exhibition then being held for a week was in full swing, I gave myself plenty of time for getting my trunk checked for that city.

The expected excursionists came with a rush, and the station people were so overwhelmed, that all requests for checking were met with "Yes sir." "All right sir," and so on, but as nothing

was done, I had to ask the baggage-car official to take it as it was, but this he declined to do, as it was "against the rules," and thus I ran the risk of losing my passage. In some way or other the trunk was at last taken in, just in time, and off we went.

As this little incident touches the border of a system which permeates the whole of Transatlantic travelling, it may be well to explain its nature. In the British Isles people have their trunks labelled with their names and addresses, written more or less clearly, or less or more *indistinctly*, according to their rank. They have next to see them safely into the luggage van at the beginning, and as safely out of it at the end of the journey, thus giving much unnecessary trouble to their owners.

In Canada, the case is quite different, since all you have to do is to tell the hotel porter that you wish your trunk checked for the place you name—several days in advance if required. The trunk, which you need not now trouble yourself about, is labelled at the station by means of a card having a certain number in large red figures, which is securely attached to the box, the duplicate of the card being handed to you. This card is not only a receipt by which alone the trunk will be given up, but a means of claiming damages if necessary. When you arrive at your destination the box will be there waiting for you, and may be removed by any person to whom the check duplicate is given.

In addition to the great inconvenience caused to the British public by their own system, there is also the annoyance given to the railway "hands," and consequent bad treatment of the box, simply because the address is illegible, and they have no time to translate it. Transatlantically speaking, all this is avoided, as the railway officials recognise passengers' trunks only by

their *number*, which can be read alike by the Heathen Chinee, or by anyone else of any nationality, which is a great advantage everywhere.

To return to our train, which we left running its course upon the line, we soon found that the woods and hills and lakes commenced to vanish. More saw mills began to appear, with their numerous products in the shape of firewood, fence-posts, and beams, and blocks, etc., for all purposes. Settlers clearing the land rose to view, and so on, until even the undulating face of the country fell away to brush wooded, then to naked prairie, and eventually we entered, on a hot day, the city of Winnipeg, the midway emporium of the continent, and the capital of the province of Manitoba, to which, as well as its surrounding territory, we must devote a few remarks.

"Western Canada" is the phrase generally applied to the great prairies which begin in Manitoba, run westward to the Rocky Mountains for a thousand miles, and northwards for hundreds of miles, from the international boundary line. In this vast plain there are, as yet, comparatively few of the millions who will in time make their homes there, but with a great railway conveniently running through it, with greater enlightenment on the part of people regarding its resources, and with a scientifically advanced and more profitable system of agriculture at command, there seems to be a great and immediate future for that territory.

Taking Western Canada as a whole, of which Manitoba only forms a small portion, it may be said that the superior quality of the wheat and other cereals grown upon these lands, and the greater yield per acre, when compared with many other districts of the continent, are now universally acknowledged. While, also, the crops

obtained are greater, the amount of labour required to produce them, owing to the nature of the soil, is less than in any other country. The climate and natural pasturage are both highly favourable to stock raising, and, as a result, no finer cattle are to-day shipped across the Atlantic to the English market, than those which have been reared upon the plains of Manitoba and the North-west Territories.

The division of the land is carried out very systematically in every particular. It is laid out in blocks of six miles square, called "Townships." These are sub-divided into 36 square parts which are termed "Sections," one mile square each, the mile being again sub-divided into quarters containing 160 acres. The townships in turn are all numbered from the principal meridian two miles west of Winnipeg, and also in a northerly direction from the southern or International boundary of the province, on the parallel of 49° N. Lat. While, again, the adjacent province of Ontario is exceedingly irregular in outline, that of Manitoba is practically in the form of a square, hence, it will be seen that the settler has no difficulty at any time in finding his location. There is a road allowance around every section, so that any property is easily accessible by team, each quarter section having a road space on two sides, thus, in well organised fashion, each proprietor has the most complete working control of his estate. Besides possessing a fair share of rivers, this province also contains within its borders Lake Winnipegosis, Lake Dauphin, Lake Manitoba, and the greater portion of that vast sheet of water, Lake Winnipeg.

Previous to 1870, Manitoba was known only as a fur-bearing country inhabited by Indians and half-breeds. At that time the population numbered 10,000, not more

than 1,000 of whom were whites, who were chiefly in the employ of the Hudson's Bay Company. In 1881 the population had increased to 65,000. Owing, however, to the tremendous impetus given to the colonisation of the whole country by the opening of the Canadian Pacific Railway, the population has risen by leaps and bounds, until it is now about 270,000. Further than this, it may be said that when the wonderful capabilities of the province are better known to the millions of people in the crowded portions of old countries, and in the non-productive parts of others, the increase will be much more rapid.

From a topographical point of view the whole area of the plains of Western Canada is of a most interesting nature. In this respect alone, Dr. P. H. Bryce, M.A., M.D., secretary of the Provincial Board of Health of Ontario, supplies us with much useful information. The lowest area of the plains is that of Manitoba, the height of Winnipeg above sea level being only 700 feet. From this point westward, however, for 840 miles, the country rises gradually by means of long steppes until, at Calgary, it reaches a height of 3,388 feet.

From Calgary to the foot hills of the Rockies, a distance of about 40 miles, the land rises until it reaches an altitude of 4,000 feet, quite apart, however, from the mountain ranges of very much higher elevations. Here Dr. Bryce's special knowledge of the locality will prove interesting. According to his opinion, the whole of the area of the Manitoban plains bears evidence of having once been an immense inland sea, with its several beaches marking the successive levels of the waters of what geologists have been pleased to term the great post-glacial Lake Agassiz, which left, on drying up, a black alluvium of the richest quality, covering practically

the whole of this part of the country, and making the great wheat fields of the north-west yield their choicest grain.

The whole of the higher region is notably marked by a greater dryness, and is essentially a grazing or ranching country. While cold in temperature, owing to the altitude and exposure of its plains to the winds from the mountains, its dry plains are nevertheless covered with the peculiar bunch grass of the country which has served to make the foot hill region of the Rockies the greatest stock-raising area of the Continent.

Much of a prejudicial nature regarding the *climate of Canada* as a whole, and of Manitoba in particular, has been said by those who have had little or no experience of its peculiarities, which greatly vary, according to the district, as, in such a vast country, one might reasonably expect. Even yet, with the Americans, many misconceptions have arisen, as they themselves have said, and hence, anything that comes from a really authoritative source on this point ought to be valued. For this purpose we give the following remarks of Mr. R. F. Stupart, superintendent of the Geological Survey of Canada.

"The salient features of the climate of the North-West Territories are a clear bracing atmosphere during the greater part of the year, cold winters and warm summers, and a small rainfall and snowfall. The mean temperature for July at Winnipeg, is 66°, and at Prince Albert 62°, whilst the average daily maximum temperature at the former is 78°, with a minimum of 53°, and at the latter 76° and 48° respectively. Owing to these high day temperatures, with much sunshine, the crops come to maturity quickly.

"The bright clear cold of the ordinary winter day of

Manitoba is most enjoyable. With little or no thawing, and nothing to create dampness, the air is crisp and dry, and, where, in England, or on the sea coast, with a few degrees of frost, the air is chill and raw, many more degrees of cold in the Canadian North-West are only stimulating.

"The winter goes as it comes, almost in a day. The sun pours its powerful rays through the transparent atmosphere, and when the thaw has begun, the great atmospheric disturbances created by the heated centres, cause the north-west wind to lick up with great rapidity the water which covers the plains. Seeding proceeds when the frost is not more than four inches out of the ground, and in a few days the prairie is dotted with the spring flowers. With such a soil, marvellous in the amount of its plant foods, and with the long, bright, and even occasionally hot summer day, the metabolism of the plant cells is so rapid as only to be likened to the growth of plants under a glass. To the plodding, labouring, waiting husbandmen of England or Scotland, it seems so unreal as to be incredible that four, or at the most five months, should yield for an area of 1,500,000 acres, some 30,000,000 bushels of wheat, and as much more of other grains, to feed the toiling millions of continental cities."

In view of these, and many other similar facts which could be given, it seems strange that the Government authorities have actually had to show conclusively to people who had gone far astray on these points, what the climate of Canada, and especially that of Manitoba and the North-West Territories, really is, and how it affects in a surprisingly beneficial manner both the health and the agricultural prospects of those who became settlers.

The complaints against the climate have been quite as amusing and unfounded as those which animated the minds of the enemies of the Liverpool and Manchester Railway when it was first proposed. Complaints, too, which, although they have done much mischief in the past, will be more than compensated for when the truth becomes known.

Amongst other erroneous ideas concerning the country in general were, that fruit could never grow to any extent in it; that it would be impossible to raise cattle satisfactorily; that the cold was too great, and the winter season too long, and the summer season too short, to enable agricultural operations to be carried on successfully and profitably; and further, that the climate could not possibly be a healthy one.

The head and front of Canada's offending, however, seems to have been the "great cold" of winter, and its supposed very long and destructive continuance. No doubt the cold is thermometrically great, but at the same time so dry and invigorating that people accustomed to it do not really feel it so much as the damp, penetrating cold of much higher temperature in England. The *length* of the winter, too, has been greatly exaggerated, many supposing that it was very protracted, the truth being that its average length is only about four-and-a-half months, immediately followed by the rapid change and rapid growth already noted.

A most important feature connected with farming in the Province of Manitoba, is the fact that in Ontario and many other districts the land to be farmed has in many cases to be either partially or wholly cleared of the trees, &c., which grow upon it, thus involving a great deal of unavoidable labour on the part of the settlers. In Manitoban territory, however, there are, generally

speaking, no trees to root out, hence the rush that has recently been made to that locality. The extent of this may be gathered from the fact that at the census of 1891 it was found that while the population of the Dominion as a whole had increased by eleven per cent., that of the province of Manitoba alone had increased by no less than 148 per cent. Of course, one great cause of this has been the opening out of the province by the C. P. R., and the accessibility thus given to farmers for the easy transport of their produce to market, or to a shipping port.

As part payment for the construction of the line from the Atlantic to the Pacific, the Company received from the Government about 25,000,000 acres of land in alternate and *odd numbered* sections, which are thus found not only extremely useful to the farmers, but very beneficial to the railway, as is usually the case when towns, villages, and residences are similarly situated. It may be mentioned that the sections which belong to the government are evenly numbered.

As may be naturally expected, these favoured spots are being so rapidly appropriated that before long we shall find a greatly increased number of farms and farm houses, and also new villages and towns which have sprung out of them. At Winnipeg the Company has a large land office in connection with its railway station, and to some it may appear difficult to know which department is most fully occupied. Besides this, there are various government land registration offices in the same city, and in many other towns. Amongst multitudes of others from the British Isles, &c., it may be stated that Lord Brassey has two large farms at Indian Head, and also that before Lord Aberdeen became Governor General of Canada he entered into business

as a fruit cultivator on an immense scale at Vernon, B.C., as described in Chapter XVI.

Having very briefly referred to the province of Manitoba, let me now continue my personal narrative from the point of digression. As previously observed, I arrived at Winnipeg station on a hot day in the midst of a crowd bound for the exhibition. With the Rat Portage experience of my Saratoga freshly in mind, I took good care to be on the safe side this time, and therefore had it checked immediately for Calgary, 840 miles off, under the impression that it would remain at the station until I gave the order for its removal. In that trunk I had nearly all my cash in hand, and also very important letters of introduction. Fancy, therefore, my astonishment when, upon going to the station next morning to get these letters, and also some money, I found that it had been sent off the night before, thus leaving me with only ten cents, my letter of credit having also gone on ahead! Fine position to be in!

With my knowledge of the art of making the best of a bad business, I went to Mr. William Whyte, the Manager of the C. P. R. lines west of Fort William, and reported my unhappy condition, my antecedents, my projected enterprise, my lost letter to himself, and tried to look as trustworthy as I could under the circumstances. He electrically summoned an attendant, to whom he said, after gazing at the number on my now invaluable duplicate check, "James, go down stairs and ask what they have done with trunk number 999,999."

James went down as desired, and came back with the news that it "had been sent to Calgary by the evening mail train."

After such a confirmation of my statement, Mr. Whyte kindly offered to lend me five dollars, which of

course, I at once accepted. "The best thing we can now do," he added, "is to get your trunk back."

"Will it come in time?" I said, "because I shall leave here the day after to-morrow."

"I think you may rely upon *that*," was the answer.

My Saratoga was immediately telegraphed for, and at the time specified, it was returned, just in time to enable me to repay the lent money, and clear out for the West. Truly, the check system is most admirable, especially when one knows how to work it properly, the accuracy of its *backward* as well as forward movements, being due to the fact that the very distinct number of a trunk enables its position on a line, even of 3,000 miles in length, to be ascertained at any time, and returned if desired—unerringly.

When I left the station on my arrival day, I headed straight for the well known Manitoba Hotel, but was informed that there was "not a bed to be had—jam full sir," as I could see for myself by the crowds around me. I tried other places with the same results, as people were not only sleeping in bed rooms, but in drawing, dining, and other rooms, etc., all over the buildings.

At last, a friend in need took me to a boarding house where he thought I might succeed.

"We have nothing but a cot to offer you sir," said the manager.

"A cot!" I said, "could I see it please."

Down we went to a dismal, uncomfortable looking basement floor, where, sure enough, beds of some kind had been laid out in rows on the bare floor for twenty people, mine being the twenty-first if I took it.

"Could you not give me a sofa-bed?" I asked.

"Oh yes, we can do that for you," and so, eventually, I was treated to a sofa in one of the handsome bedroom

corridors, an American gentleman kindly offering me next morning the use of his adjacent room for dressing in.

During the day I roamed about in "Happy Traveller" style, and was abundantly rewarded. As, however, my readers may wish to know at this point, something concerning the wonderful city of Winnipeg—the central metropolis of Canada—let me here describe its creation, and development to the present.

Palmyra was originated in the midst of the great Syrian desert by means of a well of water, which made it a halting place for caravans on their journey. This formed the nucleus of a small community, which in time expanded until it reached what it eventually became. Now, how did Winnipeg come to grow out of an almost treeless, and apparently endless plain? This may be best answered by the Hudson's Bay Company, which was not only founded as far back as the year 1670, but ever since, amidst the rise and fall of nations, amidst the vacillations of trade and commerce, and amidst, too, the rise, progress, decay, and final extinction of many famous firms, has gone on gaining strength, and now occupies some of the finest buildings in the various towns and cities of Canada.

These same people had in early days to protect themselves from the frequent attacks of the neighbouring Indians by building numerous forts which were stocked with provisions, etc., to last for some time. Two of these forts were named "William," and "Garry," the former title having been recently given to the port of Lake Superior, previously mentioned; and the latter, although in ruins, remaining one of the historical features of Winnipeg.

Some idea of the rapidity with which this city has advanced may be gathered from the fact that, when

Lord Wolseley arrived at what was merely known as "Fort Garry," in 1870, to crush the Riel-O'Donoghue Rebellion, the population was only 100. By 1880, this had become 6,500, but in 1886, the C. P. R. opened out the country to Vancouver, which caused the population to increase so much that by 1895 it had risen to 30,000. To-day, it is nearly 50,000, and from all that can be gathered concerning things to come, we have reason to believe that this will be immensely exceeded before long.

With the object of showing what has already been done in this respect, let us take, for example, the prairie city of Chicago. In 1825, the village from which this city sprung consisted of 14 cabins, but when incorporated as a town in 1833, the population had increased to about 150. In 1840, this number had advanced to 4,479; in 1850, to 29,963; in 1860, to 109,206; in 1870, to 306,605; and, in 1880, to fully 500,000. Between the latter year and 1890, Chicago went ahead of all the cities in the world with its unparalleled increase of 596,665, and to-day its population is fully 2,000,000, thus clearly indicating the marvellous rapidity with which a combination of favourable circumstances may enable modern communities to extend.

As a seaport, San Francisco has advanced by leaps and bounds from a population of 34,000 in 1850, to at least 400,000 in 1890, and about 500,000 to-day. These and many other instances might be adduced to show how the growth and prosperity of towns and cities is due partly to local and geographical causes, and partly to their systems of intercommunication with each other and with the sea. Hence, we may reasonably assume that what has thus been so successfully performed in the past, will be similarly accomplished, to some extent at least, in Winnipeg.

Amongst its fine buildings are the City Hall, where I had the honour of meeting a few of the leading officials, from whom I received much kind attention, especially from Mr. H. N. Ruttan, the city engineer, who supplied me with the fullest information regarding some of the characteristics of his prairie metropolis. This fine building is occupied by the municipal authorities, and is not only handsomely built and beautifully situated, but has all its interior arrangements admirably carried out. The numerous other buildings, &c., are also a great embellishment to the town, and although wooden footwalks prevail in many places, broad and magnificent asphalte pavements, and all the improvements which modern science can suggest, are being rapidly introduced.

CHAPTER VIII.

A Trans-Continental C. P. R. Train, Popularly Considered.—Railway Works at Winnipeg—Rolling Stock Practice—Composition of a Mail Train—Peculiarities of the Locomotive—The Spark-Arrester—Cow-Catcher Incidents—The Fender—Baggage Car—Colonist Car—Tourist Car—First-Class Car—Irish Amateur Signalman—European and Trans-Atlantic Systems compared—New System of Electric Train Lighting—Train Officials—The Conductor—Brakesman—Dining Saloon Staff—Sleeping Car Attendants—Engine Driver and Fireman—"Hell-Fire Tom"—How two frightful Accidents were averted—The *Safest* Occupation.

AS Winnipeg is not only the great and ever-growing central city of Canada, but one of the main rolling stock stations of the C. P. R., it may be well, as a pleasant digression, to note some of the peculiarities of the Trans-continental trains which here find such a splendid harbour of refuge when repairs or alterations are needed, or breakdowns speedily rectified. This will be clearly understood when it is stated that the above railway has its chief inland workshops at this point, and that its train yard alone contains about 30 miles of sidings. In addition to this, there is a very fine station containing the offices of those who control the system westward to Vancouver.

The C. P. R. Company design and construct most of their own engines and cars in their large Montreal

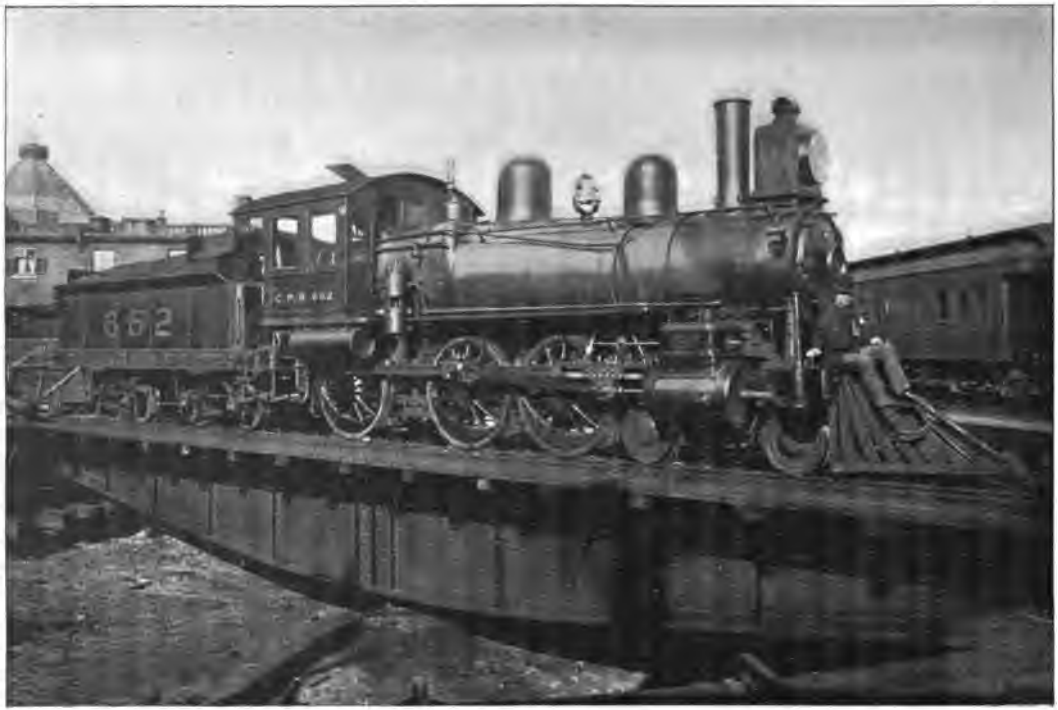
works, the engineer-in-chief of which is Mr. Atkinson—an old London and North-Western hand from Crewe—whose acquaintance I had the pleasure of making, and by whom I was shown round his most interesting and instructive establishment. All the more so, too, as Canadian railway practice differs much from that of the British Isles owing to the peculiarities of the country, the climate, the permanent way, and the continuously long distances travelled over.

A Montreal to Vancouver train is one of the finest and best equipped in existence, and usually consists of one powerful locomotive on flat and comparatively easy country, whilst in the mountains, two are required, according to circumstances, which greatly vary, and in which the length and steepness of an incline are very influential considerations. The cars are as follows :—

In the train, for instance, which brought me to Winnipeg, we had one engine, one baggage car, five colonist cars, five tourist cars, several first class cars, and also drawing-room and sleeping cars combined, as previously described, one dining car, and one private car. After having discharged its crowds of Exhibition passengers, some of the cars were taken off, when, however, the Rockies were reached, an observation car was added, and the dining car left behind, as roadside station hotels provided all that was necessary for meals.

The view on next page illustrates one of the latest and most powerful C. P. R. engines, and also clearly shows some of the leading features which distinguish a Transatlantic locomotive from those on British lines.

As will be noted, the engine is a ten wheeler, having a swivelling small-wheeled bogie underneath the front end to enable it to traverse sharp curves otherwise impassable. The steam cylinders are of the extremely



EXPRESS ENGINE ON CANADIAN PACIFIC RAILWAY.

popular "outside" class, the pistons of which transmit their power direct to the wheels without the intervention of the crank axle still so prevalent in many of the best English locomotives. As the piston rod crosshead works on a *single* guide instead of those of the usual double bar description, greater simplicity, and also freer accessibility to the internal machinery is obtained, and as all the large wheels are coupled together, the tractive power is greater than if only one pair of extra large driving wheels had been used instead.

The driver and fireman are located in a comfortable house which presents a marked contrast to the open air exposures to cold, and wet, and snow, and wind, which used at one time to exist, to the severe discomfort of the working hands, and danger to the train. The small door at the front end of this house gives access at any time to every part of the engine for examination while running. A very *striking* feature of all these locomotives is the bell, which, although accompanied by a whistle, is universally rung during arrivals and departures, and is much more agreeable than the latter.

The steam-domes on the top of the boiler are for the purpose of supplying dry instead of water-saturated steam, which might cause a smash in one of the cylinders if allowed to enter them and deposit fluid. In case the crescent shaped appendages to the main wheels might perplex some readers, it may be well to state that these are only weights which are used to balance the working parts when in motion, and thus create their necessarily smooth and steady action. The locomotive referred to is one of the most powerful on the American continent, since not only are its steam cylinders and boiler larger than those of any engines in the British Isles, but the steam pressure is also greater—210 lbs.

per square inch. The enormous power therefore at command, to draw a heavy train across a continent, and over the steep inclines of the mountains in safety, will at once be seen.

An invaluable feature of this, as well as of all other engines, is the *Spark-arrester*, which, in the form of a wire netting, is now placed inside the necessarily elongated smoke box, as shown in the view. Without this appendage, the country in many places, during dry weather, would be in danger of terrible conflagrations, and, indeed, in early days, from this cause alone, was frequently set on fire. The smoke box, thus constructed, forms also a most convenient seat for the truly immense and brilliant head light, which in many parts of the country is required to show the driver as much of the line in front as possible.

Throughout Transatlantic territory, and especially on the prairies, animals of all kinds seem to know that, in hot weather, the line makes a more pleasant bed than dry grass, and also sometimes a more convenient pathway. Hence, will be seen, the great danger to which an unprotected passenger train would be thus exposed in the dark.

The *Cow-catcher* is simply an angular frame of timber or of steel placed in front of the engine, as shown in the plate, and so arranged that if any obstacle should be upon the line this instrument pushes it off at once. To show the mischief which might otherwise occur, it may be mentioned that in a case I well remember on the North British Railway, a cow happened to stray upon the line whilst an express train was coming along. In a moment the locomotive had cut the animal to pieces, the whole of the machinery being splashed with its blood, and interlaced with its flesh, bones, hide,

and horns in the most ghastly manner. This will clearly indicate the value of the detail just named, and also of the enormous head light referred to.

On one occasion, when travelling by a very slow American train, Artemus Ward asked the conductor "what *that* thing was in front of the engine?"

"That's a cowketcher, sir, to keep the engine from running into the cows."

"Indeed! don't you think you have got it in the wrong place?"

"No sir, we always puts it there."

"Wa'al," said Mr. Ward, "if you will take my advice you'll put it at the back of the train to keep the cows from walkin' in and bitin' folks!"

It may be added, that a portion of the illustration just described represents the Happy Traveller as he appeared during a long run through the Rockies, which is referred to in Chapter XIX.

The *Tender*, for sharp curve rounding facilities has two swivelling bogies, on the same principle as that of the engine, but suited to the minor duties it has to perform. Of course, the tender is so arranged internally as to carry not only sufficient coal for a run of so many miles, but the requisite supply of water as well. On some of the English lines, where the Flying Mail train has to save every minute on a long run, this water is automatically scooped up by the tender from troughs on the line at certain points without stopping, thus allowing continuous travelling for great distances.

The other details of the engine and tender are capable of very interesting description, but as it will not do to pile technicalities on general readers, I shall have to forego the pleasure of touching upon them. It may be said, however, that, by the aid of two men only, the

engine shown in the view is in the act of being turned round on a turn-table which rests on conical rollers. This is constantly done at termini and elsewhere when required. We need only further add that this engine, simple as it may appear, has, nevertheless, a marvellously skilful internal arrangement of machinery which has required no less than 60 years of breakdowns, smashes, and frightful disasters, and mechanical progress to bring it to the high state of perfection it now possesses, both for safe and for economical working.

To return to the train itself, the *Baggage Car* may be taken first in order, as it immediately follows the tender. This car is quite a little warehouse for the storage of luggage, and here, as in all other departments, such a perfect system prevails that to put a *checked* trunk into one of these cars is much the same as putting a letter into the post office, so unerringly is every movement executed. Further even than this, a trunk thus located is accessible at any time to its owner while the train is running, which, on a long journey, is a great convenience.

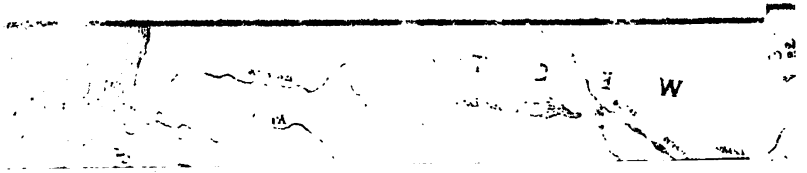
The *Colonist Car*, which comes next in order, is chiefly used by the class whose name it bears, which includes miners, agricultural labourers, working-men of every kind, emigrants, Chinese, Japanese, etc., in short, people of every description. Their well-balanced sleeping shelves are constantly at hand to pull down or push up as required. When down by day, they form excellent places for carrying parcels, and everything else, the owners themselves included, who frequently lie full length on them when not more actively employed.

Next in order to the above, and higher in rank, is the *Tourist Car*, the occupants of which live, sleep, have their meals, and enjoy themselves in every possible way.

These passengers bring their own provisions with them, a splendid cooking range, and all accessories being provided for their use near one end of the car. By this means, every lady and gentleman has a chance of cooking in turn their beefsteaks, mutton-chops, eggs and bacon, etc., to perfection or otherwise, according to their knowledge of the art; *scullery* appendages being supplied for washing-up purposes. Portable dining tables are also provided, which may be afterwards used for any other purpose, or stowed away when not wanted. By night all the beds are brought into position ready for use, as already described on page 60.

The *First-Class Cars* are not only splendid works of art, but are also extremely comfortable, everything being handsomely fitted up, and as useful in application as possible. All the seats are reversible at will, and all the windows are double as elsewhere throughout the train. The ventilating openings in the roof are so well guarded by fine wire gauze that hardly any dust or grit can get inside, and in addition to this, a hooked pole, always at hand, enables the passengers to regulate the amount of air opening as required. In this, as in all the other cars, entrance can only be had at each end from the line direct by means of steps. The special value of this arrangement will be clearly seen from the fact that passengers can be easily let out or in at any point on the prairies, or in the mountain regions, where possibly there may not be a station for miles. The conductor, too, can not only stop the train in full career when required by anyone, but intending passengers in the Far West can do the same by simply waving a flag, which otherwise would mean a danger signal.

This brings to mind a story of early days. An Irishman had been so studying the art of railway signalling,


W

Th
a
pr
m
co
bs
kr
fo
al
ot
ni
as

ar
hi
pc
w
T
by
im
hi
ai
ca
di
ar
pi
pr
m
n
a
th
w

m

that he thirsted for an opportunity to put his knowledge into practice. One day, whilst walking along the Great Western Railway, the chance unexpectedly came, the express actually flying to meet him.

"Now thin, Pat, be quick!" thought he.

Tying his handkerchief to a stick, he waved it frantically. The driver seeing the "danger" signal, brought his train up with a tremendous jerk. Running up to the guard, Pat exclaimed—"If ye plaze sorr, will ye give me a ride?"

"Come in this very minute; I am delighted to see you," replied that official, and in he went, only, however, to be handed over to the police at the next station, to get a lesson or two from them on railway etiquette.

It may here be observed that the English system of dividing a carriage into separate isolated compartments would never be tolerated in Canada. Fancy yourself on a run of say 600 to 800 miles shut up in a small room with disagreeable people, or perhaps with desirable companions who leave you at last in solitude. Fancy the dreariness of people thus placed, with little space to move about in, and no one to cheer them for many hours together it may be.

Then think of the outrages, and even attempted murders which this system renders possible, not to mention the damage to which one's internal machinery may be exposed in times of sudden disarrangement. These facts will show the great difference which exists between the British and the Transatlantic systems of travelling.

By means of the latter, one has a very handsome, lofty, electrically lighted, and systematically heated and ventilated *hall* to move about in, and to admire the sometimes splendid assemblages of elegantly dressed and stylish looking ladies and gentlemen who, taken with

their surroundings, produce a beautiful effect. Besides this, all the cars are so arranged internally as to allow of a very useful vestibule at each end containing lavatories. Lock-up closets, smoking rooms, private rooms, etc., are also supplied. This vestibule is fitted with self-closing doors inside, as well as an ordinary door outside to allow free passage to the steps, or through the train from end to end as desired. It may be noted that the open spaces between the ends of the cars can be nearly closed up by means of glass doors, which convert them into weather-proof observation rooms on a small scale.

The lighting of these trains has undergone great changes, from the oil lamp to the gas light, and from the latter to the electric light, which is only now coming into general use, as the details of the system have been so much improved by means of innumerable experiments. The plan lately introduced by Messrs. Stone & Co., of Deptford, has won the highest approval of various railway companies throughout the globe, many of which, including the C. P. R., are using it most advantageously and increasingly. This is owing to the fact that not only does it produce a much more brilliant and more convenient light in every way than gas, but, above all, each car carries its own generating machinery, and is so complete in itself as to be quite independent of the others in the train. So beautiful and otherwise desirable for cooking and heating, as well as for lighting purposes, is this system, that the travelling public may be very glad that the skill of the engineer has at last triumphed over one of his most difficult problems.

And now we come to the staff of officials who work the train, of whom the *Conductor* stands first. Here, my own happy experiences lead me to believe that the

Company selects its train commanders quite as much on account of their genial disposition as for their professional attainments, the wisdom of which is self evident.

The *Brakesman* is the commander's lieutenant, and has also to bear *his* share of passenger comfort and safety responsibility. His special duty is to attend to the controlling appliances of a train, which, used skilfully, guide it in safety. By night and by day, he and the conductor have the full sweep of the train from end to end, paying every attention to the passengers, examining tickets, giving advice and information to all who desire it, announcing the name of the next station sufficiently in advance of arrival, wakening up people who may be asleep, and so on. As these two officers thus patrol the train, they soon become not only objects of special interest, but well known and very useful individuals.

The *Dining Saloon Staff* are all that could be desired, and dispense in first class hotel style the meals which the cooks and their assistants have prepared, the charge for each meal being 75 cents. This saloon may be seen in the view on page 121, its large windows enabling people to see the country effectively as the train rolls along.

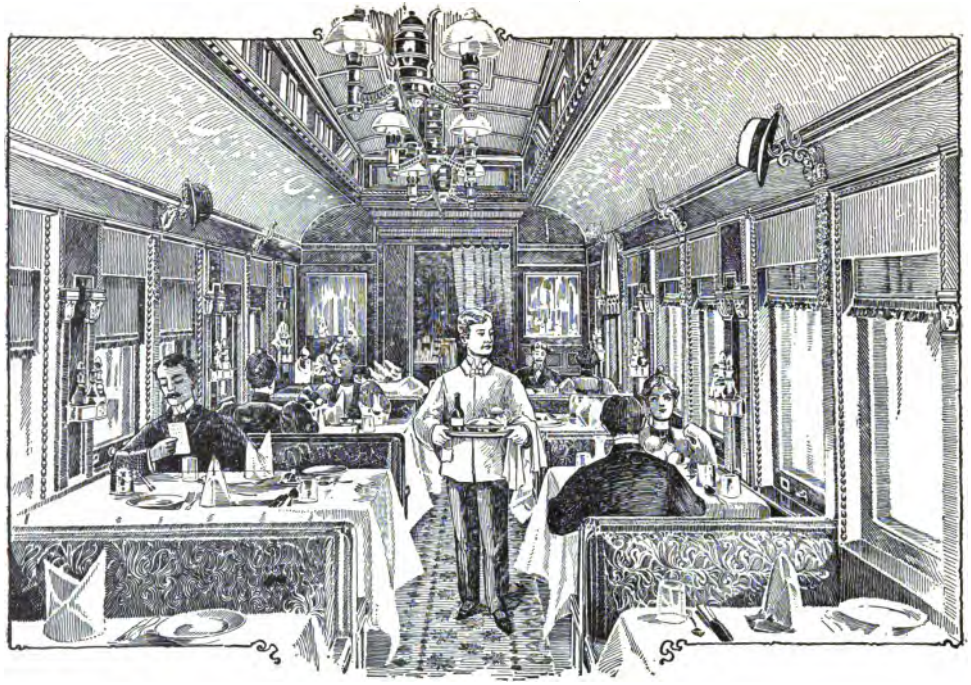
The *Sleeping Car Attendants* are generally "coloured brethren," who are so clever in their art, and so diligent in their business, and so inclined for a gracefully attudinised sleep in a corner of their department, when all is over, that they seldom seem to have time for a laugh, or even a smile, which is a pity, as those who work best should laugh merriest when the strain is off them. Physically speaking, this exercise clears the brain when sluggish, or when too seriously occupied, just as a good sneeze wakens up one's bodily faculties when they

become torpid, as the "Happy Traveller" knows full well. This fact seems to be quite unknown to the *Glum Grum* fraternity, and the *Squirmie* sisterhood, who thus insensibly get into impaired health, which otherwise might be avoided.

The *Engine-driver and Fireman* come last, but by no means least, as the safety of the train so greatly depends upon the skilful manipulation of their locomotive, and their unerring attention to signals, and also—from a fuel economising point of view—to the firing of the furnace. A driver has to pass through a long and arduous career on shunting and goods engines before he will be trusted with a passenger train. He must be ever ready for any emergency that may arise, and think wisely and well with electrical rapidity in the face of danger even of the most appalling nature, or a frightful catastrophe may be the result. Two instances of this here come to mind.

Some years ago, there used to be on the North British Railway, a driver facetiously nick-named "Hell Fire Tom." This man derived his title from the fact that on one occasion, while running along the line on his locomotive alone, he discovered, when too late, that a small bridge ahead of him had broken down. As he could not stop in time, he instantly put on full steam and sent his engine flying at a speed of 60 or 70 miles an hour right across the chasm, when, marvellous to relate, it took to the rails on the other side in safety.

The other incident happened in the Alleghany Mountains, on a steep declivity. Here, the driver of a passenger train spied, just in time, a runaway engine coming down the *same line* in ever increasing velocity. He at once uncoupled his own engine from the train and went on it a short distance ahead, then he and the fireman jumped off and let the two monsters meet. This they



INTERIOR OF A DINING CAR ON THE CANADIAN PACIFIC RAILWAY

did with a crash which shook the earth, and left in atomic form the remains of what had been, only a moment before, two splendid and powerful combinations of high class machinery. The train and all in it were thus saved from destruction, and the driver had a post of honour for life from the Company, whose property and passengers he had so skilfully protected.

These two incidents are of a romantic and most unusual nature; in daily practice, however, the driver has many points of danger to guard against unknown to the public. These include fractured machinery, damaged permanent way, and all the obstacles to line working, especially in winter, due to snow storms, snow slides, earth slides, boulders from mountain sides, wash outs, damaged bridges, and so on, which in some cases can neither be foreseen nor prevented. Into such a splendid state of perfection in construction, maintenance, and management has the railway system now been brought throughout the world that, to use the appropriate words of a late chairman of the London and North Western Railway Company, "It is, when compared with every other occupation, the *safest of all*," and this, too, he proved.

Having been brougth so much into contact with the members of the train staffs on the C. P. R. and other lines throughout Canada, and having also very carefully studied their idiosyncrasies, I can only express my admiration for the manner in which they all performed their parts whilst I was so happily travelling with them on runs of every kind and of extremely varied length.

CHAPTER IX.

WINNIPEG OF THE PRESENT AND FUTURE.—Winnipeg as a City—Its Public Buildings, &c.—A Government Centre — The Chicago of Canada—Heavy Tramcar Trains—Exhibition and its Visitors—Enterprise of the People—Prairie Children's First Visit to a City—The Australian Bush-reared Author's similar experience—Cause of Winnipeg's Prosperity—How the C. P. R. Enriched a Desert — Eventful Career of Winnipeg — The famous "Boom"—Crashes — Speculative Extortioners—Primitive means of Transport—The Wilderness of the Past—Flatness of the Country—Embellishment of Winnipeg—"Main Street" of the Future—The Love of the Beautiful—Mosquitoes on the Red River—Their Sting Scientifically considered—Prevention better than Cure.

RETURNING now to where we left off in the city of Winnipeg, after a good sleep and a good breakfast, I sallied out on a tour of observation, and found the city handsomely built in the main parts, many of its public and other buildings being of stone, or brick, or both combined. Amongst these may be mentioned the various colleges, churches, hotels, numerous banks, ranges of beautiful public and private offices, Government offices, land offices, emigration offices, flour mills, grain elevators, various manufactories, and so on. The city had also a splendid tram-car system which was tested to the utmost by the Exhibition crowds.

By night, the streets were lighted by electricity, indeed, it may here be said, that throughout Canada

this method of lighting reigns supreme, so far advanced are the people on points which in cities and towns of old countries are still so much neglected.

From the investigations then made, and from the information since received from authoritative sources, I am happily compelled to admit that Winnipeg is going to be the Chicago of Canada, as everything already indicates this. The great annual Exhibition, which was the cause of the immense stir in the town, was a grand success, indeed people said that nothing like it had ever happened. Their Excellencies, too, on their way to the Far West, just arrived in time to visit it and speak handsomely of it. Never, perhaps, were tram-cars more severely tried from day to day during a whole week. In the great cities people usually consider one motor-car and one trailer quite sufficient for any purpose, here, however, one of the former densely crowded had to pull after it at good speed no less than five trailers similarly packed!

The Exhibition. Well, that *was* a business, and no mistake. The Chiel was there, and, unsuspected by all, was busy, busy in his traditional character. The Happy Traveller was also there, moving about as gingerly as the dense crowds would allow him; the dresses, the style and manners, the general appearance and all round conduct of the nobility and gentry, the citizens, the farmers, the old, the middle aged, the young and the very young, with the husbands and wives, the brothers and sisters, the cousins and aunts, and *prospective* relations, too, of the above, from all parts of the country, coming in for his closely scrutinising but most amiable attentions, the object being to collect a few choice little notes for publication in this book.

'Pon my wor-r-d! or rather, *Oh my!* it was a

business, indeed, to do what I wished to do, but at last it was accomplished. It was quite a treat—quite a unique study of Canadian character in all its phases—for one fresh from the Old Country, to meet under such favourable auspices his brethren and sisters of the New World in the midst of a scene before which the subsequent similar glories of Toronto and Quebec were only of secondary importance. It was a regular *Farmer's Festival* in every respect, and hence people of all ranks, and ages, and occupations, went to it in such numbers as to ensure its record success.

A distinctive feature of the Institution, and one which no doubt helped it, was the manner in which the week was planned out. For instance, Monday was the "Opening" day; Tuesday, the "Children's" day; Wednesday, the "Farmers'" day; Thursday, the "Citizens'" day, when everyone had a holiday; Friday, the "Americans'" day; and Saturday, the "Ladies'" day, when the whole of the floating and resident population of the district was expected to come and give a splendid finish to a really most attractive event, and all the more so because it took place in the heart of Canada, far away from all other similar entertainments.

The enthusiasm of the people was remarkable. The streets were crowded. Everybody was on the move, and even the hotel waitresses, dressed all in white, were perspiringly working away like steam engines trying to please everyone, and possibly to get off at night to see the fair, so at least one of them told me—a little word of kindness evidently cheering her.

When at the Exhibition, it could be easily seen that the crowds around me represented people from all the cities and towns, villages, hamlets, and solitary residences, not only near at hand, but hundreds of miles

away, as when a subsequent traveller with them on the line I fully discovered. The delight of all was pleasant to see, and their most admirable conduct gratifying to behold. When I saw the children of the prairie and of the distant mountains, who had for the first time come to town, how it awakened my own recollections of the past when I, too, an eight year old bush-bred Colonial who had only seen the country, entered for the first time the city of Sydney.

How clearly those visions of early days now rose to view! Our journey by covered cart from "Lainshaw," our 100 mile inland farm, to the "Blackheath" Inn during the first day, then another similar journey next day to the "Weatherboard," then through wild fastnesses and over bad roads to the Emu Plains which, as well as the Nepean river, we had to cross on our track to Penrith. Here we caught the gorgeous mail coach which, starting at two in the morning, ran us in dashing style some hours afterwards through Parramatta, and then, under the rays of a brilliant sun, landed us in the afternoon in that, to me, City of Palaces, that city of wonder and glory and magnificence, with its ships and steamers and lovely harbour, and bunshops, and fruitshops, and all the rest of them—the city of Sydney—the capital of New South Wales! The scenes connected with that famous journey, and others of the period, seem, even yet, to be photographed unfadingly in my mind. Only one event happened to mar the delight I then abundantly experienced, and that was when, on being taken to the Theatre Royal, I saw the cruel clown of the play run a red hot poker into the side of the pantaloon, and send the poor old gentleman howling in agony all over the stage!

Sweet visions of Australian life passed before my

mind as I gazed on and mixed with the crowds of people who embellished the grounds and helped to successfully finance the Great Exhibition I had the pleasure of being so charmingly associated with. No doubt, too, in distant years, when the boys and girls of these vast assemblages have passed middle age, and even become elderly men and women, the glories of Winnipeg, as they then saw them for the first time, will remain amongst the most exquisite recollections of the past.

And now, let us try to explain the causes of the great prosperity of this city. Firstly, it may be said that its splendid geographical position in the heart of Canada is one of the main secrets of its very rapid extension. Placed so far away on the prairie in comparative solitude, with Ottawa 1,300 miles off on the east, and Toronto and Hamilton not much less; with Vancouver nearly 1,500 miles westward; with thousands of miles of river and lake navigation around, and with numerous railways radiating from it in every direction, what else can be expected than that Winnipeg will continue to be, in a rapidly expanding manner, not only the commercial focus of the vast adjacent territories, but the main centre of manufacturing industries still to be immensely developed, and of university and high-class public school education.

Situated at the junction of the Assiniboia with the Red River, the advantages of the site for trading purposes were long ago fully recognised by the Hudson's Bay Company when they built Fort Garry, and to this day these rivers have proved extremely useful. It was not, however, until the C. P. R. was opened that Winnipeg began to move upwards by leaps and bounds. This event infused life into a desert. The rich agricultural lands of Manitoba caused farming and ranching

operations to go ahead in grand style. Villages and townlets sprang into existence where none had been before. Small but rapidly growing populations were continuously added. Trade and commerce flourished throughout the province. Winnipeg was made the receiving depôt and distributing centre of Manitoba, Assiniboia, and the whole of the vast N. W. territory, and hence, in a very short time, the Fort of the past became merely a relic in the city of the present.

As the rise, progress, and development of Winnipeg fairly indicate the similar advancement of other colonial cities and towns whose surrounding circumstances are more or less favourable, we may here sketch its history in outline from the beginning.

Although the Hudson's Bay Company had a post at Fort Garry since the year 1812, the history of Winnipeg only dates back to 1870. In the early part of that year the total number of buildings outside the Fort was 28, the manufacturing institutions being represented by a tannery and a harness shop.

From this year onwards it became a fixed belief in the minds of the people that their small community had great things in store for it, and that Manitoba was destined to be a rich, populous, and prosperous province, and hence the confidence freely expressed soon spread to the east.

In 1872 a branch of the Merchants' Bank was established, and from this onwards, eastern capital began to be freely invested in the town and province. In 1874—the year in which the city was incorporated—so many extensions were made in every direction that the population rose to 3,700. Notwithstanding the terrible convulsions that shook the monetary system of America and Europe during 1873 and 1874, the year of

1875 opened with bright prospects not only for Winnipeg but for the whole of Manitoba, the most valuable addition to the machinery of business being the establishment of the Ontario Branch Bank. The Red River had now no less than five passenger and three cargo steamers placed on it, one vessel which made only occasional trips having, in the previous year, been found sufficient. A new City Hall was then built, and city improvements went on extensively, various manufactories were added, and the population went on increasing until it reached 5,000.

In 1877 the first sustained efforts for railway communication throughout the province and with the eastern world were made, and in the early part of that year the citizens offered a bonus of 200,000 dollars to any Company which would construct a railway from the city to the western boundary of the province. It was not, however, until near the close of 1878 that the St. Vincent branch of the C. P. R. connecting with the St. Paul, Minneapolis, and Manitoba railway at that city was completed, and through communication to the eastern portion of the continent secured, the population by this time having reached a total of 6,500.

The importance of the aid rendered by the railway may be gathered from the fact that during 1879 and 1880 the progress of the city was unusually rapid, the population having by the middle of the latter reached 12,000, which was still further increased by the close of the year, railway communication to Portage-la-Prairie on the west having been completed.

With the year 1881 the famous Winnipeg "boom" set in, and the state of inflation reached before its close can be better remembered by the residents of the period than it can now be described. The fact never-

theless remains that during that year the city and surrounding country made unprecedented progress of a *lasting* description, and the influx of settlers, who had come to remain in the North-West and grow up with it, was immensely greater than that of any preceding year. The boom, therefore, although carried to the wildest excess, was not a mere bubble. The energetic manner in which the C. P. R. syndicate commenced and continued the work of railway extensions gave such an impetus to the general excitement that in a few months the boom was at its height, and so penetrated every branch of business that money purchased very little of anything owing to the enormously high prices existing for all kinds of commodities. Before the close of 1881 the population of the city had reached nearly 20,000, about 5,000 of whom were idlers who had been attracted by the speculative mania.

The rapid construction both eastward and westward of the C. P. R. brought such a large floating population that 1882 was by no means a dull year in mercantile circles. Nevertheless, the cost of living was so high that it was evident a revolution was necessary before a better state of affairs could be reached. Hundreds of emigrants were weekly passing through the city to seek homes farther west, but its reputation for most extravagant charges for everything had been told to them, and hence they stopped in it as short a time as possible.

A year of what may be termed "crash" came to Winnipeg during 1883, and men who, early in 1882, were considered rich, entered upon the new year with bankruptcy in front of them. A large number of failures took place during the first quarter, and during the second quarter things became much worse. The month of July was entered upon with a dread of panic hanging

over the country. Banks and other financial institutions which had fostered and encouraged the reckless trading of boom days were now mercilessly exacting in their demands, and many, who in a more confident state of trade, would have weathered the storm, were forced into insolvency.

A tremor ran through the fabric of North-Western trade when the total failures for the third quarter of the year were published. Winnipeg came in for its full proportion of these, and, although the last quarter of 1883 was one of great severity, it was felt that the storm was passing away, and, indeed, soon afterwards it disappeared.

During the time that this tempest was raging a great revolution of another kind had been going on in the city. Speculative extortioners had been nearly all ruined, and rents of buildings of every description gradually sank until they became less than half of their former rates. Speculators who had been unduly increasing the cost of the necessaries of life, found themselves at last in deep trouble as these food supplies declined rapidly in value. Indeed, so beneficial had these movements become, that 1884 was entered upon with general business in a healthy, if not a prosperous condition, and as a natural consequence, solid progress was made during the year.

The history of the city from this point onwards has been a chequered one, but not sufficiently so to require comment. In 1885 it had a serious rebellion in the North-West to contend with, which greatly disturbed the minds of the citizens, and in 1886 the greatest event of all happened, namely, the opening of the C. P. R. from Montreal to Vancouver, which not only sprung a greatly extended trade upon the whole country, but brought it, by means of its splendid steamships, into direct touch

with Japan, China, and the rest of the world. Step by step, therefore, the metropolis of Central Canada became what it is to-day.

In view of the brilliant future of Winnipeg a few hints from an old engineer may perhaps prove acceptable, as they are given with the hope of helping forward the interests of a city of which he has many delightful reminiscences.

Lying as it does on such level, sea-horizoned ground, Winnipeg cannot well be picturesque, but if nature has denied it those features of scenic interest so liberally bestowed upon many other places, why cannot this be made up for artificially? Was not Babylon in the same position when the Median Princess came from her land of mountain and flood to reside in it? Did she not complain to her loving husband that she could not admire such dreary, monotonous surroundings? Did she not say to him in winning tones, "Cannot you do something to oblige me in this respect, and I shall love you more than ever?"

The great King thought a while. He pensively pondered over the peculiarities of his most perplexing position, and eventually conceived a grand idea, in chaotic form, no doubt, but one which the Royal Engineer of the period worked out in detail to perfection. Thus were originated the "Hanging Gardens" of wondrous build. In New York and Chicago there are ranges of offices up to at least 350 feet from the ground to the promenade floor on the top of the flat roof, not to mention the extra height of pinnacle, &c., adornments.

Now why could not some architect combine the leading features of these ancient and modern buildings in the design of a colossal edifice, which would be,

either far away or near at hand, picturesquely attractive and at the same time commercially profitable? Why should it not take the form of a long range of offices and shops so arranged that while, on the one hand, they themselves become objects of unique interest and usefulness from a business point of view; they become, on the other hand, a hilly eminence laid out with tree-planted terraces and gardens as a fashionable promenade resort?

Give the structure the name of "*Mountain Gardens*," and then see how rapidly this title will interest the public. The question will then be, not—"Have you shot the Lachine Rapids?" or "Seen Niagara?" but—"Have you seen the wonderful Mountain Gardens of Winnipeg?"

Then, again, look at Main Street as I saw it, with its immense breadth of 132 feet unembellished by a single tree, and with nearly all the grand buildings up town, whilst the part within view from the C. P. R. station wanted beautifying at the very place where the multitudes who pass along the line could see it to a perfection seldom attainable. These blemishes, however, can easily be rectified, as handsome buildings will no doubt be shortly erected there, and rapidly growing trees occupy the spaces where they should be now. Thus, and in other ways, the city will acquire an amount of fame and prosperity at present little dreamt of.

It may be asked why we lay so much stress upon city improvements. Well, as the love of the beautiful in some form or other pervades the minds of most people, it is evident that this should be gratified, especially when it can be turned to profitable account. Indeed, the peculiarities of human nature should be studied quite as much as the other practical branches of business. The railway companies know this well,

and therefore make their carriages homes of *beauty* and luxury and *magnificence*, simply to catch the public and increase their revenue. For the same reason the leading ocean and river steamship companies lavish enormous sums of money for the purpose of having, one might say, regal splendour and comfort in their ships, because it attracts crowds of high-class and rich passengers, who enable them to repay themselves for what appears to be extravagant expenditure.

The agriculturist and his engine builders study human nature in their own way by giving the farm labourer machines painted in the gaudiest style, with brilliant greens, and blues, and yellows, and scarlets arranged to suit his taste and make him proud of his implements, and thus, with greater pleasure, do more work. So on, and so on, in other ways too numerous to mention. Should not then city adornments, judiciously carried out, produce similarly satisfactory results? We think so—to some extent at least.

Winnipeg is not going to be merely a commercial and manufacturing focus for Canada. It is in addition to be the home of art and science as well as of trade, and also the delightful winter resort of people for many hundreds of miles all round, and even from the West Coast. These people need to have their refined tastes gratified, and their presence magnetised to the spot, and how can this be more suitably done than by carrying out in some form or other the improvements which it is hoped we have not unacceptably proposed, and which are adaptable to other places similarly destitute of natural beauty.

One evening I went by tramcar a long country drive across the Red River by a magnificent steel-built bridge, which had only recently superseded a primitive timber

structure. The car, crowded with passengers, stopped for five minutes near a wooded part of its bank, and here the mosquitoes came out in swarms delighted to see us, and humming so sweetly as they alighted upon our exposed parts. Oh, my! hadn't we just a lively time of it! The ladies actively used their fans and handkerchiefs, and tucked their dresses closely around their ankles. The gentlemen using their handkerchiefs whisked and smacked their own faces, fluffed the points of their noses, felt down their necks, and so on, until we again started and gladly left our friends behind us as we entered the town.

As insect life is more or less the plague of foreign countries, various preventives and remedies have been discovered, which, although they suit some people, do not adapt themselves to all. In practice, a mosquito injects an irritant fluid into the blood of the person he stings with the object of making it more savoury. Now, if you allow him quietly to have his feed, he takes back this fluid, and will thus save you from the usual unhappy effects. "Suppose," you say, "if I have a number of them on me at once, what then?" Do the best you can, as circumstances alter cases. One part of cedar oil, however, to eight or ten parts of almond oil is with some a good preventive when rubbed on the skin, as the mosquitoes do not like the scent of the compound.

Practically, a house is kept free of them by having wire gauze self closing doors inside the entrance doors, and screens of the same material outside the windows. If the mosquitoes, however, or the black flies should catch you in a boat, or camping on the bank of an infested part of a river, you will have a rare time of it, as my good friend Mr. Bittinger, the United States Consul-General for Canada, told me from his own

holiday experience. At the worst, these insects are only to be found in certain places and at certain times; personally speaking, however, I traversed half the Continent before I met them.

And now, having perhaps done Winnipeg fair, though brief justice in description, it only remains to add that when the last day and the last moment came for me to remain within her borders, I rolled away on the C. P. R. in the midst of a densely packed Exhibition homeward-bound crowd, on the track of the sun, as before.

If the roofs of the cars had been made *flat*, as they were at one time on British lines, many of the people might have gone on the top, as they used to do in early days. The arching of the roofs, however, while adding strength to a car, and increasing its beauty, and also giving abundant space overhead, has now rendered such performances impossible. We had, therefore, to do what we could until our numbers were thinned by stoppages at stations on the road to Brandon, which was to be my next place of call.

CHAPTER X.

THE RESOURCES OF CANADA FOR THE INDUSTRIOUS AND ENTERPRISING.—Reminiscences of the Archbishop of Rupert's Land—"Canada should be better known at Home"—Business Life in the Old Country—Manual Arts of To-day—Value of Workshop Training—Lord Dashe as a Smith—The Shipbuilding Marquis—Advantages of Practical Knowledge in the Colonies—How "Practical Hands" succeed as Farmers—A Successful Farmer's Story—Valuable Lessons for all—Opinions of others we met—Secrets of Success in Canada—How the Government helps Settlers—How the C. P. R. aids them—Misunderstandings regarding the Climate—Hints for the Enterprising—New Life on New Lines.

SOON after leaving Winnipeg, I had the honour of meeting in the train His Grace the Archbishop of Rupert's Land, and as he had been many years in Canada I found that he could give me authoritative information concerning it from his own point of view, which was very gratifying. We had a most

interesting and lively chat for some time, during which he said many things which quite confirmed what I had frequently been told by others regarding the good prospects for the industrious and enterprising from the Old Country. Besides this, he complained to me that the people at home did not know or understand Canada as they should do, or take sufficient interest in it, as he had frequently discovered.

"Well," I replied, "those at home are so compelled nowadays to give their whole attention to things immediately concerning them, that they have little time to spend upon others with which they have no connection. I hope, however, I may be able to enlighten many on the points you have named, when I return to England."

As previously mentioned, our train was densely crowded, not only with Exhibition visitors returning home, but with representatives of all classes of society and of various nationalities from the eastern cities and from Europe, some of whom were going to Japan and China on arrival at Vancouver. What could one wish for more in the way of variety, or for the practice of that useful art, the study of character?

After a fine run of 133 miles from Winnipeg, we reached Brandon at 24.10 o'clock, the train leaving again at 23.20, as our watches had to be put back one hour to suit "Mountain time," which here begins. And now that we have arrived in the very midst of a district in the far-famed province of Manitoba, where "mixed farming" and all that pertains to it flourish, it may be advisable to make what, it is hoped, will prove a useful as well as an interesting digression.

So far as professional and business life generally in the Old Country are concerned, it may be said that these have, in recent years, become so financially deteriorated,

and the prospects of employment sometimes so remote after a certain age, that unless one has private means, or influential friends, or some good practice to succeed to, it is not advisable to waste time in preparation for any of the professions and other occupations, the chief reasons being as follows:—

(1). The rapidity with which technical and commercial education is now imparted to students by means of Universities, Colleges, Schools of Science, etc.

(2). Crushing competition in business, which greatly reduces the profits, even sometimes of the most famous and formerly prosperous companies, firms, and private individuals, thus compelling them to adopt the cheapest systems of management, which include the employment, when possible, of *young* hands, boys, and young women instead of men.

(3). The fact that multitudes of those who, twenty-five years ago, would have become carpenters, joiners, masons, etc., now rush at office and similar employments. Hence, with such forces arrayed against the middle-aged men of to-day, it cannot be wondered at that they should too often find their occupation gone, as the *Age Question* now attracts so much attention.

In other words, few out of employment at the age of thirty-five are considered eligible for any appointment, although at the same time full of experience, energy, and talent. This means that many who ought to have good prospects for the years to come are practically stranded, and that highly intelligent and honourable gentlemen, who have spent the best years of their lives in acquiring valuable experience of a perhaps most intricate profession, and who delight in active service, are compelled to lead a miserable existence in idleness.

For the reasons given, it seems that a really good

trade or business is more suitable than a profession out of which little or nothing can be made by, say, 75 per cent. of its members. Manual labour in ancient times held a high position, and no one who lived by it seems to have been thought the worse of by the upper ten. Adam, was a gardener; Moses and David, shepherds; Paul, a tent maker; and above all, "The Master," was a carpenter. Strange to say, this art is the one which, to-day, is mainly employed.

The mason and bricklayer can only find occupation in places where stone or brick is the chief constructive material for buildings, a remark which applies more or less to all other trades. The carpenter and joiner, however, is appreciated everywhere, and particularly so in the Colonies, where timber is so much used.

The immortal Duke used to say, "If you want a thing well done, do it *yourself*," and no gentleman should fancy himself above being able to do workman's work on his own account when needed, as is frequently the case in out of the way places. Of course, we should never expect people of the refined classes to use a manual trade as a life occupation or they would lose caste, and never hope to win the love of a general's, an admiral's, or a judge's daughter, however much they tried for it, although aristocrats themselves. What I mean is, that they should learn one or more of the practical sciences which may some time or other prove useful to them.

I myself can testify to the value of workshop practice, having had, through being an apprentice in two different engineering establishments, as much as six years of it, at a time, too, when the most exquisitely beautiful workmanship was chiefly produced by hand tools alone, as machines were not so much used

as they are now. Indeed, a fair knowledge of the practical arts, even from an amateur's point of view, was at one time found to be a most convenient accomplishment. The following story comes to us from early days:—

A stage coach was conveying a party of ladies and gentlemen to a country house for the Christmas festivities. During the journey one of the axles broke, fortunately, near a road-side smithy, where one of the passengers helped to weld the fractured parts together, and thus quickly allowed the coach to proceed. In the evening, the amateur smith appeared in dinner costume, to the intense surprise of one of the ladies, who, fancying him to be a "common person," exclaimed to a friend—"Good gracious! who is that man entering the room? *He helped to mend our axle!*"

"Oh, that is Lord Dash-Blanque, let me introduce you to him!" was the reply.

Well do I remember the Marquis of Ailsa, whose Culzean Castle, in the county of Ayr, I had some years ago the honour of professionally visiting. I not only found him a simple minded gentleman in every sense of the word, but a lover of practical engineering and ship-building. He showed me over his fine estate, and also his handsome private workshop, well stocked with machines and tools of all kinds, inside the castle, and then took me round his closely adjoining Works, where some steam yachts were in course of construction. Everything was in splendid order, and over the door of each department was some appropriate quotation in large letters, such as "Procrastination is the thief of time," "Waste not, want not," and so on. The Drawing office was a model of beauty in itself, and on its black painted floor the Marquis began at six in the morning

to draw full size, in chalk lines, everything pertaining to the working plans of his ships, which afterwards became famous.

For real practical use and pleasure combined, especially in foreign parts, there is nothing to be compared with a fair knowledge of the art of using iron and wood-working tools. To be able to chip and file straight. To know how to drill holes properly with hand braces, and screw them if required. To make bolts and nuts out of scrap iron. To know how to plane, and chip, and chisel, and mortise, and tenon, and do all sorts of things in timber, either for house or for farm requirements, etc. To do a little bit of forging—in *iron*, I mean—and so on, especially at a time when every shilling saved, or every payment from others for work thus performed, is of importance. Even when the initial log cabin has been exchanged for a handsome villa built by yourself from your own plans, and financial prosperity has been attained, a knowledge of how to pass a £10 wind wheel, or water wheel, or electric or foot-driven lathe through all its varied performances will be found most useful.

Private practitioners have, during recent years, been so much injured by the development of public Companies which now perform so much of the work that formerly belonged to their own special province, that it is now high time to look out for something else in another land. Something, at least, which will bring a fair share of permanent prosperity, and offer good hopes for the future.

It might be hard for some of our almost stranded walking cyclopædias in any of the sciences, or even perhaps in law, to begin again in a new line, in a new country. It will be easy enough, however, for young people who are thinking about entering business, to

direct their attention to Canada, where ultimate results are more likely to be satisfactory. To them alone, what follows is especially directed.

During my travels in that country, I learned much of a useful character from many varied sources, and also from a great variety of people, including Ministers of Agriculture, Mining, etc., down through the ranks of all classes associated with farming, whom I met. They all agreed that those who intend to be or are already scribes, or professionals, or shop assistants, or anything, in fact, of this nature, need not try the cities and towns of the Dominion, as they are quite as over-stocked in these respects as any of ours can be. The really strong feature of Canadian life lies in its *Agriculture*, which has now become quite a practical science of the highest order, and of course holds a much better position than it formerly did, the old rough and ready come-day-go-day system having become almost obsolete.

I also found that the Canadians are always glad to welcome amongst them those who know something about what they are going to do, and how best to do it. On the other hand, however, they naturally dislike the idle class who come from the Old Country only to amuse themselves as long as they can, and then return with such a dismal report of what they had experienced in the farming line, that much injury is done to Canada which might easily have been avoided.

Just fancy the effect that Mr. Glum, or Mr. Grum, or Mr. Black, or Mr. Blue would make upon those who listen to their tales of woe and disappointment; of "insufferable cold," of a "frozen up country," and of a land where "nothing will grow," because, if the truth were known, they neither knew how, nor even tried to make them grow. How they "lost all their money" in

vain efforts to succeed, because their attention had really been given to fishing and shooting and hunting, instead of to ploughing and sowing and reaping. "Hard work" was, amongst these gentlemen, another source of grumbling, apparently not knowing that while in the Old Country a similar amount of energy bestowed in other directions, too often brings a "success" so contemptibly small as not to deserve the name, well directed efforts in the new country will generally produce much better and more lasting results. In this respect, the following history of Mr. H. H. Winearls, of Port Arthur, will point a moral and adorn a tale.

Whilst travelling along the C. P. R. line, I had the pleasure of meeting this gentleman, who proved to be not only a very genial but a very instructive companion, and so, when I approached him in "Chiel" fashion concerning his antecedents, he most kindly responded by allowing me to note them for the benefit of my readers. He told me he left Norfolk, England, in 1883, as a prospective farmer in Canada, but having had more capital than experience, he paid more attention to the dispersion of the former amongst pleasure seeking friends than to the acquisition of the latter, hence his first three years in business were of a very unhappy nature.

His next movement was to gain the necessary experience without capital, which, although a very arduous undertaking, was nevertheless an encouraging one. Mr. Winearls also informed me that the majority of successful settlers in Western Canada to-day are those who, beginning with very little money, richly possessed those qualities which make up for the want of it. After passing through additional vicissitudes of fortune, he at last attained sufficient success to convince him that Canada of the present is an excellent field for the

industrious and enterprising, especially when, after carefully ascertaining what they have to do, they diligently try to discover the best means of accomplishing their end, and also make up their minds not to be easily disheartened because they do not obtain speedy returns for their labours.

Many other people of both sexes whom I met along the line and similarly interviewed, told me much the same story. They told me how their fathers, and brothers, and uncles, and no doubt *prospective* relations had come from the Old Country, and after steady application had got along by degrees, and were now to a great extent prosperous. Having had access, too, to the written statements of hundreds of settlers whose experiences have run more or less upon the same lines, what other conclusion can I come to than that all these good people's opinions boiled down really indicate the true state of affairs.

Amongst those whose statements were of most value, was my good and highly accomplished friend, Mr. W. T. Jennings, C. E. of Toronto, who, as an almost life-long resident in Canada, was entitled to speak with great authority on this point. He informed me that, in addition to the want of energy and application with which so many intending farmers have unfortunately been afflicted, may be mentioned their ignorance of even the rudiments of Canadian Agriculture, which differs materially from that of England, and which has to be learnt before prosperity can be obtained. Here, however, we enter upon a subject to which the Dominion and Provincial Governments have for some time past been directing their attention, the result being the establishment of schools and colleges, such as that at Guelph, previously mentioned, where scientific and

practical training of the highest order can be easily and cheaply obtained.

Besides this great Institution, there are various experimental farms throughout Canada, including those at Brandon, Indian Head, and Agassiz, B.C. Taking Brandon as an example of what can thus be accomplished, it may be mentioned that the record of the yields per acre for 1898 were as follows:—Wheat, from 18 to 45 bushels; Oats, 60 to 114; Barley, 35 to 68; Peas, 23 to 59; Swede Turnips, 500 to 1,500 bushels; Mangels, 600 to 2,100 bushels; Potatoes, 200 to 600 bushels, and so on for numerous other products.

In addition to these farms, the Government of the North West Territories is now working several experimental agricultural stations in the various districts of the Territories of uniform climatic and soil conditions, in order to determine the most profitable varieties of plants, trees, fruits, etc., for each district, and also to ascertain the breeds of live stock which may be brought to the highest state of perfection in every locality. These stations are intended to furnish valuable information to settlers in the country, and to enable others to judge for themselves the possibilities of any particular district before finally deciding what to do.

For those who have no capital, the primitive system of learning practical agriculture from the field alone is still adopted. Here, however, the candidate for future promotion must enter the service of a suitable farmer merely as one of his paid hands, and work his way on, say for a year. By this means he can save a little money, which, judiciously expended, will give him a step forward in the manner indicated by Mr. Winearls.

As an encouragement to settlers, the Canadian Government gives free farms of 160 acres to every man

above the age of eighteen, and to every woman who is the head of a family, on condition that they live on it and work it satisfactorily, thus offering independencies for life to any one with little means, but with necessary capabilities for enabling them to do what is required. Full particulars on these points can be had on application to the Lord High Commissioner of Canada, 17 Victoria Street, London; the Secretary of the Department of the Interior, Ottawa; the Commissioner of Emigration, Winnipeg, Manitoba; or to the Dominion Lands Agent, Edmonton, Alberta, Canada.

It may be added, that the immense fertile plains of Manitoba, and the adjacent Western and North Western provinces, including the now highly valued Edmonton region, are not only rich in grain producing and in grazing lands, but possess great mineral stores in the form of gold, silver, iron, copper, petroleum, coal, etc., which only require working, the means of transport of material being either near at hand or in progress of rapid development.

Contiguity to a railway, too, is not only very advantageous from a mere transport consideration, but entitles the holder of adjacent land to certain desirable privileges, so that, all things considered, there is much that reasonable people may be satisfied with. Indeed, it may be said that, so fully has their value become appreciated during the last few years, that there has been a large influx of people from distant parts of the world, and also from the United States, where formerly a great deal of prejudice existed against Canadian territory. Not only so, but large financial institutions in Great Britain have recently acquired considerable possessions in land which they are now working in various ways.

Of course, this improved state of affairs is almost

entirely due to the opening out of the country by means of railways, and by the development of the prodigious water transport system which permeates the land so extensively. Taking the C. P. R. alone, it is no exaggeration to say that since its opening in 1886, the prairie has been largely turned into a garden; that a through connection having been established between the Pacific and the Atlantic, the whole country has been so benefited that hamlets, and villages, and towns, and cities have since sprung up and flourished, where previously a wilderness existed, and where, consequently, the early pioneers of farming had many hardships to endure; and that it has come to pass that large and small communities are now brought into close connection with each other for the benefit of all.

One of the great sources of misunderstanding regarding Canada has been in connection with the temperature of her climate in winter, of which many in England hold most erroneous opinions. Those who have lived long in the Dominion, even amongst scientific authorities, speak highly of its climate, whereas others base their ideas merely upon the readings of the thermometer, which frequently register a degree of cold that would prove very injurious to the British Islanders, who reside in a damp climate. The immense difference between the heat conducting powers of damp and dry atmospheres cannot be realised by those who have not been exposed to the influence of the latter. Dry air is the most efficient non-conductor of heat, those who live in such an atmosphere being well protected against the extremes of heat and cold by a law of nature which throughout all time has proved so beneficial, and also from pulmonary diseases, which, in Canada, are almost unknown.

A very curious example of the effect of this air is

that, under its influence, combined with friction, the application of the finger point to a jet of escaping gas will light it. The success of this strange and well-known performance is simply due to the fact that in such an atmosphere one may, by simply shuffling the feet along the carpet of a room, generate sufficient electricity in the body to produce the result named.

As a finish to this chapter, it may be said that as Canada, under immensely improved conditions of life, offers great advantages to those who will take the trouble to ascertain the best means of utilising them, they should be appropriated when possible. In this way, many of the enterprising residents of our cities will be enabled to direct their minds permanently into new channels, have new aspirations, new hopes, and new sources of happiness and prosperity, not only for present needs, but in the *time to come*. Of course, one does not for a moment wish it to be understood that people are expected to act upon such advice simply because, aided by many of the highest authorities in the Dominion, I have thus been enabled to recommend it. My object is merely to throw out ideas for others to develop by means of their own investigations, which alone can produce the most satisfactory results.

It may be added, that, knowing what I do know from long experience of the British Isles, and also of life in the bush of Australia, and, to some extent, from what I have learnt of the prairies, etc., of Canada, it may truly be said, that for all round comfort, for everything which tends to advance one's education and social interests at every point, and for absolute freedom from venomous reptiles and insect pests, there is really no place like home. When, however, that Home land has become so deteriorated in everything which affects one's

prospects in life; when being out of employment at an early age may mean premature retirement before this luxury is wanted; and, above all, when those whose greatest desire is to become loved and loving heads of their own households are compelled to remain single, it is high time to look out for something better in a new and more encouraging sphere of usefulness such as I have tried to indicate.

Ignorance of recent changes in the business world has been a great drawback in many ways to a better state of things. Much of it, however, has been due to the fact that, as a general rule, people, however skilfully directed their efforts may have been, are very reticent upon everything concerning their want of prosperity, as they are judged too harshly in such matters by others. Nothing succeeds like success, even if only apparent, as the famous doctor in *Pickwick* well knew, and although people do not like to talk about their misfortunes, this principle may be overdone, and consequently, a national evil perpetuated which might otherwise have been averted.

Facts such as these have been before me for some time past, but, for reasons previously given, it will not now be advisable to withhold truths which, if better known, may eventually produce the happiest results.

CHAPTER XI.

SIGHTS AND SCENES OF THE PRAIRIE.—The People of the Dominion from a British point of view—Two Victorian Ladies we met at Sea—"An Out of the World Locality?"—*Enlightenment*—The Bush-bred Author at Ten—"A Hottentot!"—Canadian Ladies socially considered—Effect of the Jubilee Year—Peculiarities of the Prairie—Farming on the Prairie, Prosperity of Brandon and adjacent Towns—Great Prairie Steppes—Prairie Fires—Lord Brassey's Farm at Indian Head—Regina, the N. W. T. Seat of Government—Moose Jaw—Mixed Farming on a gigantic Scale—One Hundred Miles without a Tree—Indian Tribes along the Line—Medicine Hat — Branch Line to the Mining Regions — Rockies in sight, 100 miles off—Arrival in Calgary.

ONE of the most delightful occupations I have ever entered upon, has been the building up of this book, in which I am endeavouring to treat everything Canadian in as free hand and felicitous a manner as possible, so that many may be instructed, others at least benefited, and not a few interested in Dominion affairs as they at present exist.

Everyone knows that the inhabitants of Montreal, Ottawa, Toronto, and the other cities are quite like ourselves, but when it comes to the prairies and the mountains, and the very Far, Far West regions, it may still seem to many that those located in such places must be rough in every sense, the ladies being house-

maidy in style, slovenly in language, impolite in manner, dowdily dressed, and so on. From what the good Archbishop of Rupert's Land told me, and from what others have since said on this subject, it appears that there are many in the British Isles who, although Continental tourists of the most advanced order, thus reason upon people Canadian, whom I hope to still further describe as I actually found them.

Just before our steamer *Dominion* left Liverpool for Montreal, two young ladies on board especially attracted my attention. They were of good stature, elegant in appearance and dress, and altogether looked as if they were people of quality from West end London, or West end Edinburgh. After studying their social capabilities for a time at sea, I at last ventured to approach them in the Happy Traveller style, *without* an introduction, and was abundantly rewarded for doing so.

I soon discovered that they were, with their mother, returning from a long tour in England and other places. Their conversation was charming. Their language was most refined, and free from the accentual blemishes which characterise the speech of so many good people in the Old Country. They were also light-hearted, happy beings. When, however, they informed me that they were natives of *Victoria, Vancouver Island*, for which place they were homeward bound, I was quite surprised, but of course talked to them just as if I had the honour of meeting charming Victorians every day.

Now, why was I so surprised at the information thus imparted to me? Simply this; I looked upon the capital of British Columbia as a place practically out of the world. Yokohama was 4,300 miles west of it, the great Pacific cutting its inhabitants off from that centre of life and fashion. Montreal was 3,000 miles eastward,

the various ranges of mountains previously referred to barring all attempts to reach it at any reasonable cost. San Francisco was nearly 1,000 miles south of it, and a wilderness country extended for other thousands of miles to the Far, Far North.

It may therefore well be asked, how could one expect European elegance and refinement from the inhabitants of such an isolated, desolate, and practically savage region, which, sure enough, it was at one time! I was so stunned by what these ladies had just informed me, that I quite forgot that since the year 1886, the C. P. R. had directly linked Victoria the lovely, as I afterwards found it, with the great eastern cities of Canada, America, and Europe, and by its steamers with China and Japan; thus enabling the Victorians to keep themselves in touch with advanced civilisation.

I do hope my good and highly esteemed friends will forgive my allusion to their supposed semi-barbaric condition in early days, which I am afraid, was on my part, only too natural. I must also request them to kindly accept the statement that my association with them was of the happiest nature, and that, from every point of view, they might well set an example to many here.

What, may I ask, was thought of myself when I arrived in Edinburgh, from Australia, at the age of ten? Amongst others, Uncle Robert said he expected to find me a "Hottentot," but perhaps he never made a mistake in his life till then. On the other hand, Aunt Jane, either said or thought, or thought *and* said that I was both a "Hottentot" and "Heathen Chinee" combined. One who neither knew the Bible, nor, indeed, anything else, compared with her home bred, walking cyclopædic nieces, Maria and Georgina, of about my own age.

Well, she, too, had a startling discovery to make. I

was passed through an examination just to see how much, or rather how little I knew about anything, when, to her intense astonishment, I fairly "took the cake," as the saying is, from these young ladies—and this, too, for a bush-bred Colonist! Well may we say, Advance Australia!—Tasmania for ever! Poor dear Aunt Jane had no idea of the power of my very excellent father and her own invaluable sister to educate their children better even than any Edinburgh School, in the heart of a wilderness practically as isolated from civilisation as Victoria was not so long ago.

Up to her 85th, and final year, my mother considered my educational success referred to as her own, and well, indeed, might she have claimed the honour. The cousins named are still to the fore, well and hearty, and I hope will not think less lovingly of me for thus publishing my early triumph over them to the world.

One of the city bred ladies of Eastern Canada I met on board the *Dominion* was a Miss D——, of Toronto—one of those people who unconsciously win admiration at a glance from those who know how to value an attractive exterior and pleasing manner to begin with. As she was unattached, and I was unappropriated, we soon became great friends. She was a splendid talker, and possessed a merry disposition, and, more than that, I never in my life met anyone who more thoroughly enjoyed what I had to say than she did. While sitting together on deck one afternoon, I rehearsed to her my narrative of a "Thrilling Experience in the West Indies," which I intended to give at our grand evening entertainment when we reached the Gulf of St. Lawrence. During the recital, I held her attention spell-bound until the end of the story, when, mentally relieved, she burst out into an almost uncontrollable fit of laughter.

The honour and glory of that memorable evening were divided amongst several talented performers—nearly all Canadians—amongst the principal of whom were Miss Douglas, of Montreal, our prima donna—and Miss Pemberton, of Victoria, who proved a brilliant pianist. Much of the success of the entertainment was, however, primarily due to the very genial manner and painstaking care of Mr. Edwin T. Garner, of C. P. R. official association, from London, who, with rare skill and judgment, selected the best performers, appointed himself as our chairman, and was truly a centre of life. In this, and in many other ways, I made a delightful study of Canadian character on board a Canadian ship, which, as I afterwards discovered, proved only a foreshadowing of coming events. It may be added that our entertainment was the means of raising a handsome amount in aid of the Liverpool Seamen's Orphanage.

To people Britannic who may wish to know about the Dominion from a social point of view, it may be well to say that I found its inhabitants charmingly simple in style and manner, and intellectually attractive. They were also most loyal to the Queen, and as much interested in all that pertained to the Old Country as if they lived in it. This, however, was partly due to the fact that the Jubilee of 1897 had been the means of drawing the two countries more closely together, and of showing Canada that Great Britain recognised her as the youngest of her children, and therefore, requiring more of her attention than she had hitherto received, through not being better acquainted with her, a want of knowledge which in various ways has greatly retarded the progress of the Dominion, and put the brake on much that, by this time, would have been successfully accomplished.

And now, I suppose my readers would like to know something about Prairie life as it is to-day. Firstly, however, let us see what a prairie really is. Those accustomed to our Fen district scenery will be best able to understand the nature of those flat regions in the Far West. Others, associated only with mountain and flood parts of the country, cannot do so until they actually see for themselves a great Transatlantic plain.

Well, then, a prairie, say, for instance, that from fifty miles east of Winnipeg to about 750 miles west of it, is a vast plain of more or less diversified appearance, and usually with a very marked absence of trees. The surface of the prairie may be termed "diversified" only within narrow limits, the range of which is from dead level to undulating, or rolling, and sometimes to bluffy, according to circumstances. It is also varied by means of long gentle slopes, which insensibly lead from one level or steppe to another, a formation which seems to be frequently found in other large countries.

So far as the C. P. R. route is concerned, it may be said that immediately after leaving Winnipeg, as previously mentioned, we entered upon a broad, green, and level plain, extending to the north and west, and bordered towards the south by a line of trees which indicated the course of the Assiniboine river. Skirting this is a continuous row of excellent farms with, sometimes, handsome houses and immense herds of cattle showing themselves at intervals. Without curve or deflection, as far as the eye can reach, the railway runs straight ahead to the west, the motion of the train being remarkably smooth all the time. Proceeding on our course, we imperceptibly reached higher ground, and found the country well chequered with fields of grain, and embellished with all the accessories of a farm.

After a pleasant run of fifty-six miles from Winnipeg, we reached Portage-la-Prairie, another city of marvellously rapid growth, and the centre of an extensive and prosperous farming region, which, like the others named, helps to sustain the prestige of the province for successful agriculture. Here great elevators, and flour mills, and busy streets, and excellent houses, and public buildings silently proclaim much of a very encouraging nature to those who witness them. From this point the Manitoba and North-Western railway extends for many miles to the North and North-west for the purpose of rendering more good territory available, and for bringing down grain and cattle, and in the near future salt and petroleum, etc., as well. In this it is aided by the Canadian Northern line, which branches off it, and passes through the Dauphin country. Crossing a long range of sandhills, marking the shore of the ancient lake Agassiz, we passed through a pretty and undulating portion of Manitoba, which is now the centre of very busy and prosperous towns and villages, of which numerous lofty elevators form distinct landmarks.

Proceeding onwards, we soon crossed the Assiniboine river and reached Brandon, the first house of which was erected in 1881, but in seven years afterwards the population numbered fully 4,000. Now, it is a handsome and beautifully located city on high ground facing the river just named. It also has numerous handsome churches, manufacturing establishments of various kinds, banks, hotels, schools, elevators in abundance, and with electricity well to the fore in everything. The inhabitants, therefore, may well be proud of their city, which has now become one of the largest markets for grain producers in the Dominion.

One thing that struck me forcibly as I traversed the

land was the fact that when the Canadians have by means of the most primitive and inexpensive systems of construction paved their way to financial prosperity, they seem to aim at going ahead of the Old Country as far as possible, and do it well, too. The reason being that when extensions and improvements are required, only the latest and best ideas in everything are adopted. Hence, we find that while in some parts of their cities timber-built houses and foot walks still exist, we also find in many places "coming events casting their shadows before," in the shape of broad granito-asphalte pavements which cannot be excelled by the best streets of London. This, too, in addition to the handsome stone-built public edifices frequently to be seen. Personally speaking, I was delighted with Brandon, which is certainly one of the most picturesque of the prairie cities, and seems to have a great future.

It may be well here to state that, according to the final Government crop bulletin for the year 1898, the total yield of wheat in Manitoba for that season was 23,315,745 bushels, as compared with 18,261,950 bushels for the previous year. The area sown showed an increase of 167,350 acres, whilst the average yield rose from 14·14 to 17·01 bushels per acre. The amount of oats raised on the other hand, was 17,308,252 bushels, or 6,676,739 bushels in excess of the previous year, the average yield per acre being 33·6 bushels, that of the previous year having been 22·7 only. Still greater results are expected for 1899, but these have not yet been published.

Shortly after leaving Brandon, we reached the first of the great prairie steppes which rise in succession at long intervals until the Rocky Mountains are closely approached. Now we were on the real prairie, as I

could see hour by hour, as we rolled along on one of the loveliest days ever made. Here we were passing over not an uninteresting plain which many people expect to see, but a great billowy ocean of grass and flowers, at one time swelling into low hills, and at other times dropping into broad basins studded with lakelets and lagoons of various sizes, and broken here and there by valleys and irregular lines of trees marking the water courses. The horizon only limits the view, and as far as the eye can reach, the prairie is dotted with newly made as well as with old established farms, and with herds of cattle. The sweet grass, adorned with lovely flowers, covers the land as with a carpet, ever changing in colour according to the season.

It is in such places as this, during the dry and hot season, that the value of the spark arrester in the chimney of a locomotive is most conspicuously visible, as a prairie fire once begun may rage for days in appallingly picturesque fashion, and do immense mischief. When in the Australian Bush, we sometimes experienced the effects of these fires, and on one occasion which I well remember, only saved our paddocks full of ripe grain from destruction, by instantly burning a belt of grass partially round them, which of course arrested the main body of the fire when it arrived as it had nothing to lay hold of. In cases of sudden danger this is a very effective method, the usual custom, however, is to have a permanent "fire guard" belt of ploughed land around one's farm and thus be ready for any emergency.

After a run of some hours we reached a district where the rich black earth of the valley had been superseded by soil of a lighter colour, but of great value, as it extensively produces one of the best kinds of wheat, not to mention barley, oats, rye, and several other products.

The stations along the line seemed to be built pretty much on the same plan throughout, but varying in size, of course, to suit the requirements of the town or village to which they belonged. The most prominent features of many of these stations are the large circular and elevated timber built water tanks, which prove very useful for supplying the engines with water. These tanks are strongly hooped, and kept abundantly supplied with fluid by means of Wind Wheels, which, in the simplest and cheapest manner possible, pump water into them from wells or from any convenient natural source.

One of these steel built wheels, 35 feet in diameter, for heavy work, is shown on next page with the pump rods in the well broken off for convenience. For railway tank and other similar purposes, a very simple and inexpensive timber built structure is sufficient, a vertical rod, such as that shown in the plate, reciprocatingly worked by an eccentric on the overhead shaft directly driving the pump beneath it.

When a wind wheel is not needed for pumping purposes, its motive power may be advantageously employed on a farm or elsewhere, suitable gear being supplied by the makers for any required purpose, including that of driving smaller machines, and also for driving a dynamo for the production and storage of electricity. This last named power has now become so easily and sometimes so cheaply accessible, that it may be very conveniently used for even the simplest operations of a farm or a workshop, especially when within reasonable distance of suitable water power.

The driving wheels of these engines are made from seven to forty feet in diameter, and their efficiency may be gathered from the fact that, with three throw pumps, the delivery of water per hour to a height of 100 feet

WIND WHEEL AND UPPER PART OF WELL.

with only a ten mile wind per hour, is 400 gallons for a 16 feet wheel, the similar delivery for a 40 feet wheel being 6,000 gallons.

From this it will be seen how the waste and fluctuating energy of the wind may be transmuted, stored up, and applied to useful purposes.

The beauty of the system may be still further understood when it is stated that the wind wheel not only works unceasingly by day and by night without needing attention, but is automatically able to keep a true position and to feather its vanes in the face of a rising storm, its normal energy being based upon a wind velocity of only fourteen miles an hour. Hence, may be seen the unique capacity of this engine, which does its work for nothing.

Rolling still further into the west we reached Indian Head, celebrated for its Government Experimental Farms, and for the immediate presence of two splendid and very extensive farms owned by Lord Brassey.

At a point 357 miles from Winnipeg, the flourishing city of Regina, the capital of the Province of Assiniboia, rose to view, situated in the midst of an apparently boundless but very fertile plain. Here, new branch lines of railway are either in contemplation or in course of construction; at present, however, a line branches off at this point by way of Saskatoon to Prince Albert, on the North Saskatchewan river. At Regina are to be found the Government Buildings, the Lieut.-Governor's residence, and the head-quarters of the N.W. Mounted Police—a splendid body of men who are thoroughly drilled, and governed by the strictest military discipline. So beneficial to the country has been the presence of these red coated guardians of the prairie, that even long before the advent of the C. P. R. the

lawlessness and violence of the Indians which once existed practically disappeared.

Forty-one miles beyond Regina we reached Moose Jaw, where the main line to Vancouver is joined by another from Minneapolis and St. Paul, which provides the shortest route between the Mississippi valley and the Pacific.

After leaving Moose Jaw, we insensibly commenced the ascent of another steppe, and, leaving the populated portion of the prairies behind us, entered upon what is essentially a district where pioneer farmers are to be found in occasional groups, as well as the numerous establishments of English Companies, where wheat growing and cattle raising are unitedly carried on on a truly gigantic scale, aided by the best machinery and most perfect systems of management.

From this point onwards we did not see a tree for one hundred miles, the country, however, was by no means barren, as its wonderful growth of cereals and vegetables abundantly testified. Hour by hour we rolled along the line, but with little variety of scenery. Crossing the high and broken Coteau country, the Cypress Hills appeared as a blue line in the far distance, the gradual development of which some of the passengers watched with great interest. Skirting their bases for many miles, and crossing several little rivers, we reached Maple Creek, a small town having extensive yards for the shipment of cattle, where Indians could be seen in all their war paint at the station. These consisted of more or less dignified chiefs, attended in servile fashion by their wives or squaws. We also saw their conically shaped tents or "teepees," with gaily painted canvas coverings, making, in combination with the adjacent hills, a novel picture.

Soon afterwards we arrived at Medicine Hat, which was named after a famous Indian conjuror, and near which a branch line extends by way of the Lethbridge coal mines to the Crow's Nest Pass in the Rockies, and from thence to the mining districts of the Kootenay, and the Southern British Columbia regions. The broad and beautiful Saskatchewan river affords steamboat navigation for a long distance above this point, and for a thousand miles below it, thus, not only providing a valuable water supply, but an equally valuable means of transport to places far distant from the main line.

As our train proceeded, we rose gradually to the high prairie, now a rich pasture land, with lakelets here and there, and everything to indicate that we were in the ranch country. Here, beneath the surface, is a large supply of natural gas which, at some of the stations, provides engine power for pumping water, and for lighting and heating the station houses; it is now also utilised for reducing the silver ore from the mines.

As we ran along the line towards Crowfoot Station, and reached a point fully 100 miles from the Rocky Mountains, their exquisitely beautiful snowy peaks became clearly visible along the whole length of the western horizon; on a very clear day, however, some of these can be seen 150 miles off. Travelling onwards, peaks behind peaks rose to view through the clear air, with dark bands of forest extending in some cases up to the snow line. The snow fields and glaciers glistened in the sunshine, and mountain passes began to show themselves as we traversed the country of the once dreaded but now peaceful Blackfoot Indians.

The Bow river, with its tree-lined borders, was our companion for a time, and now, crossing it by a fine bridge, we entered a charming hill-surrounded plateau

containing the very prosperous and beautiful city of Calgary, a view of which is given on page 181, and near which is located one of the 10,000 acre farms of the Canadian Land and Cattle Ranch Company, and which, 46 miles distant, was to be our next point of call. The illustration referred to not only shows one end of Calgary and specimens of the little islands so frequently to be found in some Canadian rivers, but also an extremely popular type of Transatlantic railway and road bridge. It further shows what may well represent a small portion of the undulating prairie, which, in most diversified forms, gives pleasing variety to many parts of the country we have just travelled over.

CHAPTER XII.

CANADIAN SOCIETY.—Commencing a Farm on the Prairie—How to Keep ever Young and Hearty and Happy — Canadians we met — Old Country Misconceptions of them — Prairie Society — Manitoban Lady's Letter to the Author — "The Sons, Nephews, Nieces, and Cousins of Earls almost innumerable around us"—"Aristocratic Ladies at the Washtub"—Our Experiences of Prairie Ladies—Highland Clans well to the Fore—Winter and its amusements—Bullock Car Party—"Honourables" in the Laundry and Smithy, &c.—Old Country Refinements — Prairie Residences—How constructed — Furnished — Household Supplies — Work on the Farm — Simple Methods of obtaining Water — Advantages of Good Irrigation—Hard and Soft Water practically considered—Incidents from Anglo-Canadian Life.

NOW come to a very delicate and difficult part of my subject, all the more so, too, because it affects so closely the manners and customs of the good people of Canada, especially the ladies, whose lives on the prairie may have proved a mystery to many.

Whatever has already been said, and will still further be said, in this volume, my intention is to make this chapter the most *diversified* of them all, if possible. A hint or two, therefore, from my own experience to begin with may here prove useful.

If you wish to keep yourselves young and fresh and hearty, when others of your own age are getting "old" in appearance, be always fully and pleasantly but profitably employed. Have plenty of variety in your occupations, and be versatile enough to be able to spring from point to point like squirrels when required. Remember that the labour we delight in physics fatigue. Banish all unnecessary worry, and every evil and unkind thought concerning your friends, even when tempted to misconstrue their actions, and unamiably criticise their deeds. Do not be ashamed to fancy yourselves boys and girls at times. Be able to converse well with the wisest, and laugh merrily with the merriest. In theological matters run with joyous and imperial spring upon the lines of F. R. Havergal and General Gordon, and, similarly, keep well in touch with the Infinite, and you will thus, in all-round fashion, be able to keep your minds from becoming fossilised, and your bodies from being petrified. Your features, too, instead of being careworn, lined, and saddened, will wear a genial and winning expression, even when things are against you.

Personally speaking, I was never more charmingly occupied than when in the company of my dear, good and kind lady friends of railway and steamship travel, because I then had time to study their characteristics, and enjoy their society. The social features of the Canadians will therefore prove, I hope, in at least a portion of the following remarks, an attractive theme. All the more so, too, because, while amongst them, especially in the Far West, I read their country, and everything about them, with my own powerful reminiscences of Australia continually before me.

Judging by my own first opinions of the Victorians, previously noted, and the diversified opinions of those at

home on things Colonial, one cannot help thinking that there are numbers in the British Isles who have no idea whatever of the social life and rank of some of the prairie inhabitants.

"*Commonplace* people, I suppose," remarks one person in fashionable London society—"Uneducated and uncouth," observes another of similar position in Edinburgh. Whilst a third may fancy them modern representatives of the half naked savages of pre-historic times, and quite beyond the pale of civilisation. Replying to these little speeches, the Happy Traveller would say, go and see them and talk to them in their log cabins, and dug-outs, and shacks to start with, and handsome farm villas in course of time, and you will soon find out your grievous mistake.

After these remarks, the reader may perhaps not be surprised to hear that there is now most excellent society to be found in abundance on these plains, where people of all ranks work diligently and happily for the success they deserve. Let me here give a few extracts from the letter of a lady who, with her husband, has had some years' experience of things Manitoban, and who, in other ways, has given me most interesting information concerning that Province, and also the names of some of the people referred to for verification, if necessary, but not for publication.

"We had," she says in her letter, "in our part of the country, the sons of three earls. The nephews, nieces, and cousins of earls were almost innumerable. I have heard the niece of a farmer, whose father was a general, and whose brother is an admiral, declare with great pride that in summer and in winter, her week's washing was folded, ironed, and mended all on a Monday, and also that she and her husband had

together washed twenty-two blankets in one day! This was Mrs. —— now of ——.

"Another lady, who was accustomed to this work, was Mrs. ——, whose husband was an earl's nephew. She and her husband's sisters had all, I believe, been presented at court. Our close neighbours were the —— of Northumberland, and I remember Miss —— coming to my house with a copy of *The Queen* to show me the description of her sister's presentation dress at the Drawing Room. Amongst our other friends were two families who had large legacies left them by English relations. I may add that some years ago the heir to an Irish earldom had to be hunted for on the plains of Manitoba before he could be found."

Bravo! we say to these good people, you are a credit to your race, and not above honest labour of any kind, for which, in the Colonies, no one, even of aristocratic lineage, is thought of one pin the less. My own most excellent mother, who was a daughter of an Ayrshire county family, whose father was educated as an advocate or barrister, and a relative of many other similar families, put *her* shoulders to the wheel in the Australian bush, just as people of to-day do in Canada, and often, even to the end of her long life, told me that some of her happiest years were thus spent. Her cares, however, were much lightened by the aid of a ticket-of-leave domestic servant, who was good at everything. The same class of men helped my father on the farm, and did well, I have reason to believe.

During the time I stopped at the Banff Hotel, I came to know some charming people, amongst whom was a lady from Moosomin, on the Assiniboian prairie, who was not only most elegantly attired, but the happy possessor of a very attractive manner—to all appearance

one of our own Beautiful Islanders out for a ramble in the mountains. One evening I asked her to come outside after dinner and have a chat with me in the belvidere, facing the lovely Bow River Valley. She came delightedly, not knowing the overhaul to which she was going to be exposed.

"How do you get along, Miss Wetmore, in winter?—drearily, *drearily*, and nothing cheerily?" I said, for a beginning.

"Oh no!" she replied, "we get along much better than you suppose. We have the good company of our neighbours. We have sleighing, skating, curling, and little festivities, and so on. We are quite happy thank you." To which I remarked that "I was greatly pleased to hear it."

Another beautiful phase of social life on the prairies, is to be found in the representatives of at least all the Highland Clans, who are there in great force, as well as those of other races from other places. Would you not feel pleased, kind reader, to have around you in these localities the Macalisters of Boissevain, the McDonalds of Oak River, the McKenzies of High Bluff, the McPhersons of Strathclair, not to mention lots of other "Macs," besides the Gordons, the Campbells, the Camerons, and others of historic fame, and all of them, too, getting on first rate in one way or other?

So far as evening entertainments are concerned, winter is the time when these are in full swing, just as they are in the cities, and as many who attend such meetings have to traverse distances frequently of twenty miles, the phases of the moon are often carefully studied for very practical reasons. Although the thermometer may be down to 20° or 30° below zero, the usually calm, crisp, and dry atmosphere exhilarates

those who are exposed to it, and renders them almost proof against pulmonary complaints, which, we may add, are hardly known. On this account people when travelling get along very nicely over the dry snow in sleighs or on snow shoes, or by skating on lakes and rivers, or, if a large party, in a very comfortable vehicle drawn by horses or sometimes by a team of cattle.

Fancy one of these bullock cars drawn up at the door of Lord Sintaluta's mansion in London on the night of a fancy dress ball, from which a party of ladies and gentlemen are now descending! What a stir! What a commotion there would be all around! How the Jeameses, and the Susans, and the Marys, and the 'Lizas, and all the rest of them in the neighbouring houses, not to mention the miscellaneous street crowd which is ever present, would stare and rub their eyes in blank amazement, wonder and surprise. The Canadians and the Australians, however, are so accustomed to such scenes that, as may be readily supposed, they hardly take any notice of them.

Most of those who live in England can hardly be expected to know much of any of the phases of social life on the prairie. They may even fancy that because the Honourable Valeria Farquharson has had a very busy and happy morning at the wash tub, and the equally Honourable Marcus Aurelius Bellingham has been fully and delightfully occupied with forging operations—in *iron*, of course—not to mention others of lesser degree, that they must have become greatly deteriorated in social tone.

My dear sir, or lady, what a mistake you make if you think so! These good and most worthy people may be daily engaged in what at home would be termed "menial" pursuits, but they are nevertheless at least

quite as high toned in mind and manner as ever they were, or ever will be, and ready also to occupy their former positions among the best in the land of their birth whenever they choose to pay a visit to the old folks at home.

The people just named, although strict upholders of home etiquette in everything, are at the same time as friendly and as kind-hearted as possible to those around them, mere rank not counting for much in the Far West. People are there valued for their own good qualities, and of these none are so gracefully pleasing or so powerfully attractive as "politeness" and "amiability," which not only win the friendship of those around one at any time, but act as splendid passports amongst the innumerable strangers one meets when travelling. Everybody is supposed to know this, but, as there are still a few in the world who do not quite seem to recognise the value of these qualifications, and who are thus capable of unconsciously creating misunderstandings and even estrangements which might easily be avoided, I have taken the liberty to express my opinions concerning them.

So much for the social aspects of prairie life, now how about the homes of its inhabitants? Well, it may here be said that after arrival at the selected piece of land, without perhaps a single habitation of any kind on it, your first move will be to commence to build one, while in the meantime your home is a tent, excellent weather, as a rule, aiding you considerably in your operations. According to the nature of the locality will be the construction of your first house, which on treeless undulating ground will likely be a "dug-out" or sod building, which makes a warm residence in winter and a cool one in summer.

If the region is wooded, a log-built house will do nicely, or the edifice may be built of lumber or sawn timber in the usual *finished* style, that is, of house of cards design,-with weather-boarded sides and shingled roof, the interior being made as comfortable as possible. If the wood is not properly seasoned, windows and doors will shrink, planking will crack and let in the rain, and chinks in the floors may swallow up some of your spare 25 cent and 50 cent coins, and so, as the barristers say when examining a witness, "be careful" in these matters, and all will be well.

The wall embellishments will consist of choice works of art taken from the illustrated papers. The table will be a box turned bottom upwards, or a trunk levelled up to suit. Chairs? Well, these will come in time; at present, however, a piece of log or a box will have to do. A stove, a frying pan, a kettle, and a pot will do all the required cooking. The meals thus produced will differ somewhat from those given at the "Windsor" of Montreal, or "Chateau Frontinac" of Quebec, but, never mind, there is a good time coming. Groceries of all kinds will probably come from Winnipeg in large quantities at a time, soap included, for the use of which ablutive water may be found conveniently, or otherwise — possibly the latter, but probably the former, according to circumstances. Lamps will have to be used at night, which will induce that most salutary habit of going to bed early and rising early.

The farm will want looking after as soon as possible, fencing, ploughing, sowing, etc., being absolutely necessary to produce in due time, if proper care is taken, what should be a successful harvest. Your kind neighbours will be glad to help and advise you in every way, and so, as time rolls on, you will get settled. By thus roughing

it at first you will be enabled to lay the foundation of an improved and perhaps a beautiful home, and at least a fair share of the prosperity which, for reasons already given, had been denied to you in the Old Country. This, we may add, is not only the opinion of many practical farmers and stock raisers whom I have met, but of very many more whose reports I have read, the secret of their success having been more or less owing to their knowledge of what had to be done, and also of how it could best be performed so as to enable them to weather successfully whatever adverse circumstances may have arisen at the outset.

It may here be well to state that although in a few places in Manitoba water may sometimes be scarce, as a rule a good supply is found in wells from 10 feet to 40 feet in depth. This leads one to think that if the Government authorities would in special cases sink wells, or otherwise help the farmers with their water supply, for which they would willingly pay a reasonable rent, much land might be brought under cultivation which is now neglected.

Money thus spent in suitable localities will no doubt prove a good investment on account of the general benefits thus conferred. Apart, however, from the more or less expensive mechanical methods now employed, there are various simple means of either partially or wholly storing up water for general use. One is by digging basins, and by so training the snowdrifts in winter as to create a supply of soft water when they melt, aided of course by the rainfall.

Another, is to dam back the water of a creek or small stream or even a river, and thus form what may be a spacious reservoir, which, under skilful guidance, may be very economically used for various purposes, in-

cluding that of pumping into elevated tanks. Still another, is to utilise as far as possible the intensified depressions of small area throughout the country, which, if dammed up at one or at both ends, as some of them have been, would make fine lakelets which would not evaporate so soon in a long dry season as shallow lagoons. Here, however, there is ample scope for the application of even a rudimentary knowledge of civil engineering which every farmer ought to have, as a means of increasing the value of his estate.

With the object of showing the immense advantage of having a good water supply for irrigation purposes alone, the following example may be given :—

A few years ago, an arid tract of country in South California was valued at only 5 cents an acre, When brought under irrigation, however, the price rose with a bound to 100 dollars an acre. Still further improved, the selling price of the land went up to 500, and then by steps to 2,000 dollars an acre, and even at this rate produced a 50 per cent. dividend. This was probably an extremely favourable and most unusual case. It, however, serves to illustrate the great benefits to be derived from the scientific application of water as a land fertilizer, multitudes of instances of which on a grand scale are to be found in India, Egypt, and other countries exposed to long periods of dry weather.

In the southern portion of Alberta and the western part of Assiniboia it is now generally recognised that irrigation is necessary to ensure the production of grain or fodder crops, the rainfall during the growing season being too small to suit the ordinary methods of farming. The aridity of these districts, while necessitating irrigation, has really helped to secure the great success which has attended stock raising and dairying therein, the dry

summer seasons being almost totally devoid of flies. This so affects the prairie grass that its nutritive qualities are retained, and stock grazing outside during the winter are thus kept in good condition.

With excellent irrigation at hand to produce good fodder and various other crops, ranching or dairy farming in these portions of the Territories offer many attractions to the incoming settler who does not intend to be a mere agriculturist. Very satisfactory developments on both of these lines have taken place during the past few years, as the irrigation works have become so extensive in their ramifications.

A most important point to be observed in connection with the water supply for domestic and general purposes is its quality, which may range from very soft to extremely hard. The hardness of water is caused by the presence in it, in solution, of bi-carbonates or sulphates of lime or magnesia, or both of them together, which is at once apparent by the curdling instead of the lathering of soap when used in washing. This is but a small matter when compared with the extravagant expenditure it causes on a more or less extended scale throughout towns and communities for manufacturing and domestic purposes. One out of many prominent examples of this is to be found in the formation of hard scale in the interior of steam and other boilers, which, if not carefully removed, greatly impairs their heat conducting surfaces, and requires much more fuel to perform a given amount of work. Besides this, the plates exposed to a furnace are sometimes so destroyed by overheating as to cause an explosion. Amongst the other evils of hard water may be mentioned its sometimes very injurious clogging of the pipes through which it flows, especially when of small diameter.

The advantages of soft water as a contrast to the above may be thus stated. *Hot* water is obtained more quickly and cheaply. A great saving of soap and soda in a household is obtained. The wear and tear of clothing is diminished. Flannels last longer, and do not become harsh and felted. Cooking is facilitated. From the evidence given before the Royal Commissioner, we learn that the same quantity of tea which will make three cups with hard water will make five with soft water. In short, the all round advantages produced by the use of the latter are so great that every effort—natural or artificial—should be used to obtain them.

As a very intelligible way of showing the value of soft water for washing purposes alone, it may here be mentioned that by the use of Loch Katrine water, Glasgow saves at least £36,000 a year. The Londoners, on the other hand, through the hardening effect of chalk on their water, had until recently, to pay the soap makers about £250,000 a year unnecessarily, this, however, was a fault which is now being artificially remedied. Indeed, so efficient has the system of water softening from 50 up to, say, 5,000,000 gallons a day now become, that, at a cost of one penny, sufficient hard water may be softened to save a considerable outlay in soap alone, entirely exclusive of the other advantages mentioned.

On the other hand, an insufficiency of lime in water may seriously affect the bone-producing powers of children, and amongst the poorer classes induce deformities which might otherwise have been avoided. As an example of this it may be stated nothing could have have been better for domestic purposes than the Loch Katrine water when first supplied to Glasgow about the year 1859, which, as a then resident of that city, I had

ample means of knowing. It was, however, the cause of much bow-leggedness in the street children, hence we now find that, for physiological reasons, hard and soft water are frequently mixed. There are various simple ways of removing the hardness from water when too great, but to these we need not refer as they are too drily technical to inflict upon the reader.

Amongst my most valued friends in Liverpool is the Rev. R. F. Winter, formerly harbour chaplain in Bombay, who has not only been several times across the Atlantic to Canada and the United States in charge of parties of emigrants, but has gone with them by road, and rail, and boat, and canoe, and trail into various parts of the Far West. This gentleman, therefore, knows the country well, and has been the means of greatly benefiting those placed under his care. He is also full of stories of the most interesting, amusing, and useful character concerning people with whom he has thus been associated.

Some years ago, when in Winnipeg, Mr. Winter met a man who proved to be a graduate M.A. of Oxford, and who said to him: "I came from England fancying I could obtain some good scholastic appointment, but without success, so I had to take the first work I could get, as hod-carrier to a bricklayer, which is enabling me to save a little money." Within a year this gentleman had made his modest "pile," and bought some land, which subsequently enabled him to do well as a market gardener.

On another occasion Mr. Winter met, on a Canadian railway, a friend whom he had known when in India as an officer in a British regiment, but who had migrated to the West on account of his children, and had become the possessor of a large and very prosperous ranch.

Another of Mr. Winter's stories is that of an impoverished English clergyman's widow whose son could not obtain employment at home, but eventually did so in Montreal. The whole family, therefore, removed to that city, and actually, for want of means, Mrs. —— and her two daughters entered domestic service for a time until they weathered the storm of adversity.

In some form or other this system of working for one's self is constantly being practised in the Colonies by aristocracy and gentry, college professors, university, professional, and commercial men of all ranks, without the slightest fear of losing caste. But then, it must be remembered, that their manual arts, which in the Homeland would not be socially recognised, are ennobled in the bush, or in the valley, on the prairie, or on the mountain, by the fact that they are only used as a means of eventually obtaining the prosperity which has perhaps been long denied them.

In Chapter X we endeavoured to show the necessity for people in these days learning the rudiments of practical work as a valuable standby in the Colonies in time of need, and as a useful accomplishment at all times. In *this* chapter and elsewhere, I have shown, to some extent, the application of a few of the practical arts on the farm, and the benefits to be derived from them, in the hope that useful hints may in this way have been given to many.

CHAPTER XIII.

CALGARY, ALBERTA—OFF TO THE MOUNTAINS.—Curious Effect of clear Air—Calgary a Trade Main Centre—Extent of the Mountain Ranges—How Formed—Approach to the Rockies—Magnificent Transformation Scene—Effect upon Visitors—Bow River—Lady Macdonald in the Rockies—Banff and its Hotel—Chief Points of Interest—National Park and its Attractions—Society at Banff—Westward Ho!—Lovely Morning Effects—A Sea of Vast Mountains—On the Summit—A divided Stream—Kicking Horse Pass—Rendings of the Rockies — Effects of Natural Forces — Entrance to British Columbia—Breakfast at Field, at the Foot of the Pass.

WHEN I arrived at Calgary, as mentioned on page 165, I immediately went to the Alberta Hotel, which very conveniently adjoins the station. This city is charmingly situated on the banks of the ever winding Bow River, which has its origin near the summit of the Rockies. It is also located on a hill-girt plateau, most impressively bordered by their snow-capped peaks, as may be seen in the view on the next page.

CALGARY, WITH THE ROCKY MOUNTAINS IN THE FAR DISTANCE

These appear so close at hand, owing to the wonderfully clear air, although at least sixty-two miles off, that they completely misled a visitor to the city who conceived the happy idea of having a walk to them before lunch. Proceeding onwards, mile after mile, he never seemed to get any nearer to them. Lunch passed over. His friends went in search of him, and at last found him taking off his clothes on the bank of a small stream, the mountain distance having proved so deceptive that he now thought he had a *river* to swim across.

From the nature of the country travelled over since leaving Winnipeg, one would not suppose that Calgary was 3,388 feet above sea level, yet so it is. It is the centre of the trade of the Northern part of the great ranching territory, and is one of the chief sources of beef supply for the mining districts in the mountains beyond. Excellent building materials abound in the vicinity, and lumber is extensively made here from logs floated down Bow River. From this city a branch line runs north to the now flourishing district of Edmonton, on the Saskatchewan River. Another branch line runs south to Macleod, thus throwing open a new and vast country, which is annually attracting large numbers of settlers. And besides these railways, a new C. P. R. line has recently been opened to Vancouver, *via* the Crow's Nest Pass, and the Kootenay Lakes and mining districts, which proves a most attractive and alternative means of going to or coming from the Pacific coast, all of which are clearly shown on the map. Calgary is also an important station of the mounted police, and a Government Reserve for the neighbouring Indians, besides being the seat of various manufacturing and mercantile operations.

It will thus be seen that Calgary is bound to be the

great and increasingly flourishing mountain border city of the Far West. Here, too, as in other places, the Hudson's Bay Company's Stores, the Bank of Montreal, and other well-known Institutions are handsomely to the front. Here, also, I came in for the only wet day since leaving Montreal. Many Indians were to be seen on horseback and on foot, who picturesquely adorned the streets, their attire, although more or less in European style, chiefly consisting of brilliantly patterned blankets, ornamented with beads, etc.

The streets of the city, which was only founded in 1884, are broad, and in the main parts adorned with various fine buildings, but owing to the heavy rain, those in the suburbs were more or less flooded, especially in the deep ditches which sometimes lined the wooden footwalks. I had thus a distinct object lesson regarding the origin in old London of the ancient and still popular custom of giving a lady the *inside* of a pavement.

And now we are in for a mighty and magnificent change of scene. Leaving behind us the prairie regions, we head away for a short time only in the track of the sun, as our course will soon become very erratic. This will be at once apparent as the vast sea of mountains extending from the Far North for a distance of 2,000 miles to the south, and from 500 to 600 miles in width, closes around us.

Does any one really know how these and multitudes of others were formed? We think not. It is believed, however, by those who have travelled much over the Rockies and other ranges, that when the earth was in a plastic state, volcanic agency had longitudinally and transversely pressed it into the corrugated form before us, just as one might do, for instance, with the hands

on a tablecloth. It has, too, throughout all time, had much to do in moulding the surface of our planet.

This great subterranean force of nature is simply caused by cataclysms of water rushing through internal fissures upon the red hot interior of the globe, and creating steam in such inconceivable quantities, and of equally inconceivable pressure, that if no volcanoes are near to let the mighty force escape, as with the safety valves of steam boilers, the most stupendous and far-reaching dislocations of the surface of the earth will be sure to follow, of which there are many examples. In extremely mild form, however, the working of the volcanic machinery just described may be seen almost at any time by those who wish to look down the crater of Stromboli.

Soon after leaving Calgary we reached Cochrane, which is well within the gradually rising foot hills of the Rockies. Here extensive ranches were passed in rapid succession, great herds of horses and cattle, and flocks of sheep rising to view as we rolled along. Sawmills and coal mines also appeared, and the wide valleys changed into broken ravines. As we approached Kananaskis station, the mountains, now very close at hand, apparently presented an impenetrable barrier. Their bases were beautifully tinted, and their sides were flecked with white and gold as the morning sun rose upon them, whilst high above all, somewhat obscured by the early morning mists in their lower parts, were distant snowy peaks which seemed to pierce the sky.

The Kananaskis River was crossed by a fine steel bridge from which the roar of the great Falls could easily be heard. The Rockies now rose in great masses, streaked and capped with snow and ice, and just beyond the station a bend in the line brought the

train between two lofty walls of rock which form "The Gap," or gateway to a transformation scene as sudden and as exquisitely beautiful as the mind can conceive or the eye rest upon. Most of the peaks we shall have around us for a few hundreds of miles range from 8,000 to 12,000 feet in height, some of those in the Far North, however, have a much greater altitude. More than that, there is so much of a fascinating nature about them, that one of Mr. Cook's travelling agents has declared that, although he had seen the grandest mountains that Norway, Switzerland, and many other parts of the world could produce, he had never, for charming variety and lovely atmospheric changes, witnessed anything that could surpass in beauty the peaks and ranges we are now endeavouring to describe.

It may be interesting for the reader to know that the term "Rocky Mountains" is only a general expression, as no less than four distinct titles have been given to those we had either to cross or to pass on the road to Vancouver. From the Gap to Golden, in the first Columbia river valley, we ran through the *Rockies* by way of Banff, the Lakes in the Clouds, the Kicking Horse Cañon, and Mount Stephen, &c. From Golden to Donald, and on to Beaver Mouth, we passed through the same valley on a low level. From the latter, the Columbia flows northward with a prodigious bend, enclosing between its arms the *Selkirk Range*. Soon after crossing the Columbia at Donald, we at once entered this range through the gate of the Beaver River, which is a tributary of the former.

Proceeding on our way we climbed the mountains to the summit, then, descending the other side by way of the Great Glacier, we eventually reached Revelstoke. Here we again crossed the Columbia, and at once

entered the *Gold* or *Cascade Range*, where we traversed a lovely part of the country, and also the shores of the large, most irregularly-shaped and mountain-bordered Shuswap Lake. After this, passing through the Thompson River Cañon, &c., we entered at last the Fraser Cañon, leaving it below Yale. Running now through a rich agricultural district bordered by the *Coast Range*, Vancouver, the western terminus of the C. P. R., was eventually reached, the whole of the course being clearly shown on the map.

Treating the subject more in detail, it may be said that on passing the Gap we entered a valley of which the Bow River was the beautiful tree-verged centre. The first stoppage was at Canmore, near which, at Anthracite, are large coal mines which extensively supply the country from the coast as far east as Winnipeg. Here an observation car, which proved most useful, was linked to the train. Passing the lovely glacier-embellished "Three Sister" peaks, we headed straight for what appeared to be the end of our run, as the Cascade Mountain of 9,875 feet, and the sharp cone of Peechee, fully 10,000 feet in height, seemed to block our path. Grandly sweeping, however, to the left, we soon found ourselves at Banff station, after passing through a portion of what is termed "The Mountain Park"—a Government reservation of great beauty—26 miles in length by ten in breadth.

We are now in the midst of scenes which, to do them justice, would require some one accustomed to word painting of the highest order, such, indeed, as Lady Macdonald, who has written very beautifully and expressively concerning them, but her remarks are so well known that it will be needless to repeat them.

So extremely varied are the scenes which continually

rise to view in these regions, so clear the air, and so cut up, distorted, hacked, haggled, wriggled, and precipiced in every conceivable way are the mountains, and so fascinatingly beautiful at every turn are their surroundings as well as themselves, that for hours together I have stood on the platform of the cars drinking in those scenes of loveliness in such a manner as to enable me now, as they rise before me, to write about them as I found them. More than this, with the object of accomplishing my ends as fully as possible, I obtained the kind permission of the Company to ride on their locomotives over any part of the country I pleased.

Returning to Banff, I, immediately on arrival at the station, drove up with good company to the hotel, which is about a mile distant, and here I found myself in the midst of landscapes of rare beauty and sublimity of which I cannot say too much.

The frontispiece shows this hotel, with the Bow and Spray Rivers, the Bow Valley, and an amphitheatre of mountains in front, of which a portion of Mount Rundle, of about 10,000 feet in altitude, is on the right hand of the foreground, whilst a small part of Tunnel Mountain is similarly placed on the left hand of the picture. The latter has a magnificent spiral drive seven miles long formed on its sides, leading to a height of 5,000 feet. From this point, however, by means of a good trail, the summit may be reached either on foot or on horseback. So popular with travellers is this locality that it has become a favourite resort for people from all parts of the globe, from May 15th to October 1st, when the hotel is closed for the season.

The principal points of interest include the Sulphur Springs Cave and Pool, and also the open-air Basin, both of which possess health-invigorating properties which

bathers greatly enjoy; the Bow Falls; the Devil's Lake of Minnewanka; Sun Dance Cañon; the mountain side Hot Sulphur Springs, where people variously afflicted are cured; the Sanitarium Hospital for invalids; and the National Park Museum, &c. Besides all these objects of interest, science has been lavishly employed in adding to the attractions of the district. Streams have been bridged, and trails penetrating for miles into solitudes have been cut, so that in various directions visitors may drive, ride, wheel, or walk, or fish, or shoot as they feel inclined. Steam launches, boats and canoes have also been placed on the Bow River for the use of visitors, and Swiss guides provided for mountaineering parties. Indeed nothing has been overlooked which could help to make this locality one of the most charming in Canada.

If I were asked which hotel I liked best in the Dominion, I should certainly say that of Banff, and for very good reasons. Firstly, I am a lover of simplicity and pleasant society—ladies especially. To my mind, however, all the great hotels of the cities and towns, with their halls of columns, and stateliness, and stiffness are frequently so filled with people pre-occupied with their own affairs that they are practically inaccessible. They have their "*gentlemen's*" reading and writing rooms and halls of splendour, and if the fair ones are thus excluded from these places they then have little attraction for me.

Now, at Banff there is nothing of this, since its visitors are shut out from the world with all its cares, and shut in with nature in all its loveliness, and with each other. Hence, the feast of reason and the flow of soul have full swing, as I myself delightfully experienced. The ladies and gentlemen entered the hotel

by the *same* door. They sat at the *same* tables. The former actually favoured those in the writing and reading rooms with their presence. They wrote and read with and talked to them with the greatest ease, and seemed delighted to do it too. They unitedly formed walking, and driving, and boating parties, etc. Instead of wandering through a city at night, say as at Montreal, at Banff we used to sit so cheerily, so merrily, in the beautiful hall of polished pine, 4,500 feet in the air, before a large log fire, and tell our stories, and spin yarns, and laugh, and smile, and look sweetly attractive, and then have music in the drawing-room until, regretfully, we had to retire for the evening.

Oh, my! how these dear good people mixed with and talked with each other in the happiest manner possible, and yet in most cases they had never met before. People from China, and Japan, and the United States, etc., meeting those from all other parts of the world, including the prairies, in such friendly fashion, and leaving impressions, as they did on me, which will be treasured amongst the happiest reminiscences of that unique spot.

One thing which here struck me most forcibly was the charming sympathy which existed between the Americans and the British. At one time, genteel Britannic people used to say of their Transatlantic cousins—"loud, coarse, showy, vulgar in mind and manner," etc. The return compliments being—"pompous, proud, haughty, conceited donkeys," and so on, just because they either did not know each other sufficiently, or did not care to do so. I met many United States ladies and gentlemen in Canada during my tour, and must say that those I became acquainted with, especially at Banff, Vancouver, and Victoria, were

really delightful people. Three of their names are very pleasantly remembered at this moment—Mrs. Ellis, of Chicago, and Mrs. Macdonnell, and Miss West, of San Francisco. Heaven's light be your guide, dear friends, wherever you are.

During my stay at Banff, I came in for an exquisitely beautiful morning performance by two squirrels, who were having some amusement on their own account. Oh, my! it was a treat—in private view style, too. How those lovely, bushy-tailed animals playfully raced and chased each other with lightning speed, and in spiral fashion, up and down a tall pine tree, and sprang from branch to branch, instinctively knowing its strength to bear their weight and momentum. For some time I was fascinated by their faultless skill as acrobats of the highest order, and brilliant, tireless energy, without missing a single step. Long life to their honours! One of these squirrels, eating a melon, is shown in the initial letter on page 137.

And now, "Westward Ho!" must be our cry. After the usual early morning tea and coffee service, some of us started in the hotel omnibuses for the station, from which, after a few minutes waiting for the train, we departed at 6.40, this arrangement being best suited for enabling passengers to have a *daylight* run through many of the grandest parts of the mountain regions. For a long way ahead, winding in extremely serpentine fashion, and forming at the same time a number of islets, was our old and welcome friend the Bow River, until eventually lost to view.

Although the morning was hazy at first, the atmospheric effects were beautiful, but when the mists had rolled away before the rising sun, what scenes of splendour sprang into view on all sides, as peak after

peak, sometimes of the most extraordinary formation, and heaven piercing altitude, rose immediately as well as distantly around us in awe-inspiring magnificence! Everyone was on the alert in the observation and other cars, intently watching the ever changing aspects of what may well be termed for stony ruggedness—"The *Rocky* Mountains."

During this trip, we passed the Vermillion Lakes, and various mountain streams, broken more or less by cascades. We left in the rear a sea of mountains, and had another sea in front of us, including the wonderfully beautiful Castle Mountain; Mount Lefroy of 11,535 feet in height; Mount Ball of 10,900 feet; and other similarly lofty peaks and glaciers were passed in succession, and shortly afterwards we arrived at Laggan, the stopping place for that delightful spot where the *Lakes in the Clouds*, and also the first of the great glaciers are seen in all their exquisite beauty.

Here I remained for a day of the most glorious sunshine and splendour ever made, honoured by the company of two charming English ladies. As we drove up from the station to the Chalêt, part of which is shown in the view on page 193, we passed for two and a half miles over a road which skirted on one side a lovely clear green, rock-bound, and sometimes tree-bridged stream, which formed the outlet of Lake Louise, and on the other side a richly pine-clad mountain. Opposite the Chalêt is the precipice over which Mr. Abbott lost his life some years ago; the magnificent ice-covered mountains, and snow-fed lake of emerald beauty and great depth forming, with its surroundings, a fascinating source of attraction to travellers. After a good breakfast we started on a walking tour, by forest trail to Mirror Lake, and finally Lake Agnes, other emeralds of rarest

beauty set in the most picturesque fashion, the heights of all of these above sea level being respectively, 5,645, 6,550, and 6,820 feet.

As the early dinner hour was approaching we had reluctantly to return, as we aimed at climbing another mountain on horseback to view Paradise Valley, and finish off with a row on Lake Louise. In these performances we were so successful that I am sure Miss Hitchcock and Miss Law will forgive me for here publishing their names, when I add, that without their delightful presence my happiness on that ever memorable occasion would have been greatly diminished.

Pursuing our course, we reached the railway summit of the Rockies, or "*Great Divide*," as it is termed, at an elevation of 5,296 feet above sea level. Here a clear rivulet descends the ridge, and, visible from the train, separates into two streams, one of which flows in increasing volume towards the Atlantic, and the other similarly towards the Pacific Ocean.

Passing onwards, the line rapidly descends for many miles, and skirting the shore of the beautiful Wapta Lake, enters the sublime and awe-inspiring gorge of the "Kicking Horse Pass," where, 1,000 feet immediately below us, is seen, as a gleaming thread, the Kicking Horse River. Not only is the incline we are now descending very steep and very long, but the railway itself, as in many other places, runs on a mere shelf cut out of a mountain side. The danger, however, is more apparent than real, as the C. P. R. Company most carefully guards all these and similar spots in various ways, as will be described in another chapter.

Coming down one of the grandest of cañons, and looking ahead, we discern the spires of Cathedral Mountain, and above all Mount Stephen, rising in

LAKE LOUISE FROM THE CHALET.

sublimity to a height of fully 12,000 feet above sea level, and 8,000 feet over our heads. Up to the present we have been in the Province of Alberta, but in a few minutes we shall cross the frontier into that, in every way, unique province of Canada—*British Columbia*—a land of riches and enterprise of the highest order, now being rapidly and successfully developed. Hail Columbia! we say. Three cheers for the land of the mountain and the flood.

What an immense field for study and reflection is opened out for us by the presence of the mountains we have just passed, as well as multitudes of others on our path to the West! How the mind tries to revel amongst the inconceivably grand displays of natural energy which, at the creation, and, indeed, for ages afterwards, produced such stupendous results! What a rare good time they must have had amongst themselves in those days of yore, so much so, indeed, as to make one almost regret not having been able to witness them. When the dry land appeared above the surface of the water which at first enveloped the globe, it was no doubt forced up by volcanic agency, the plastic rock beneath it being thus pressed into mountains of primary shape, and similarly corrugated in some places by means of lateral pressure.

When these had solidified, the internal forces of the earth must have disrupted them in every possible way, as the testimony of the rocks clearly enough indicates. The Rockies tell us that they have been tremendous uplifts of stratified rock, ranging from the oldest Paleozoic strata to those of the latest Cretaceous, some of their sections, of several miles in length and thousands of feet in thickness, having been pushed straight forward, whilst in other places they have been tilted more

or less on edge, and lie in a steeply slanting position. Many sections have been bent and crumpled under prodigious side pressure, whilst all of them have since been broken down and worn away until they have become only colossal fragments of the original upheavals, as may be gathered from an inspection of the escarpments and cliffs. One of the best examples of this is to be found in the Giant Cathedral Mountain, with its sheer precipices of several thousand feet in height.

Besides the volcanic forces named there are others which have had their share in moulding our scenery into forms of beauty. These not only belong to the glacial period, but have existed ever since in a minor degree, and have had a hand in embellishing the surface of our globe. Sometimes, in breaking up coast lines; at other times in planing down hills into prairies for greater usefulness, or smoothly rounding sharp-cornered rocks, or in punching, digging, and excavating in the most inconceivably irregular fashion, the beds of what were to become great or little rivers, or vast or small lakes, according to circumstances.

Good examples of these are to be found in "The Thousand Isles" of the St. Lawrence, the 12,000 Islands of the Lake of the Woods, and that marvellous chain of lakes and lakelets, and their connecting channels, which form the unique peculiarities of Northern Ontario and Northern Manitoba, &c., as described in Chapter VI.

When, however, we come to the mountains, we have, from the same glacial cause, aggravated of course by severely intensified dynamic action, profound gullies, and creeks, and crevices, and the most rugged ruggednesses on their sides, and also on the borders of mountain

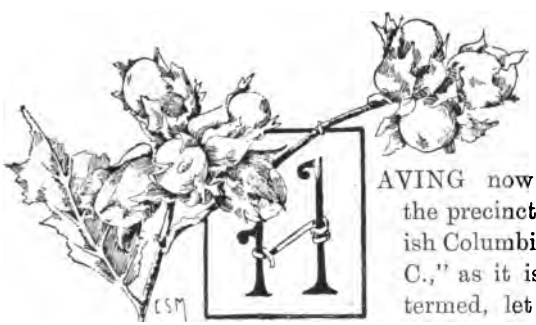
lakes and mountain rivers, the two latter being chiefly fed by the snow beds above and around them.

The numerous spires, and peaks, and castellated, and cathedralled, and otherwise fantastic formations, chiefly to be found in the Rockies, also the boulders on their sides, have been mainly caused by the expansive action of ice in their crevices. Thus disrupted, the mountain tops and sides assumed in time their picturesquely rugged, and cragged, and jagged appearance as we have tried to explain. These remarks, it may be added, although specially applied to the Rocky Mountain ranges, may be extended to many other parts of the globe, where the action of the forces involved is not always so clearly apparent as in the scarped mountain sides of Western Canada.

As we entered British Columbia by Mount Stephen, a few minutes more found us at Field Station, where a good breakfast was awaiting us. According to the usual Transatlantic custom, we began with choice fruit as a foundation for what followed. This custom, we may add, is, gastronomically speaking, a delightful one. Physiologically, it is a useful one, as it helps to keep our internal machinery in good order, and is therefore well worthy of adoption everywhere, even in the British Isles, we should think, although the system does not seem to be appreciated.

CHAPTER XIV.

British Columbia.— Clever Masterstroke of Policy — How it affected the C. P. R. — Peculiarities of the Province — Extraordinary Developments—Its Great Rivers—Lakes — Cities—Climate—Scenery—Precipice Lines of the C. P. R.— How Protected from Danger—Heading for Columbia River Valley — Through the Valley to Donald — Planning of a Railway through the Mountains — "Big Bend" of the Columbia — Entrance to the Selkirks — Devil's Bridge — Bear Creek — "Where are yer Grizzlies?" — A Giant Incline — Great Gorges — Sublimities of the Selkirks — Wondrous Scenic Effects — The Summit — Extraordinary Snowfalls — Their Cause — Colossal Avalanches — Snow Sheds—"Sir Donald" and other Peaks—Dinner at Glacier House.



HAVING now entered the precincts of British Columbia, or "B. C.," as it is usually termed, let us consider its general plan before proceeding with details. This province is not only the largest but one of the richest in Canada, both in the extent and variety of its resources. Resources, too, which might have been still unknown but for a very clever movement of its governing powers, which practically originated the C. P. R. as a Trans-continental line. When Sir John Macdonald was striving to consolidate

the Provinces under the title of "The Dominion," B. C. kindly informed him that unless she was connected by a railway with the civilised eastern world she would not join the Confederation. At any rate, unless a promise was given that the line would be commenced within two years from the date of joining it.

Sir John, clearly foreseeing the great benefit to the country which would thus arise, persuaded the first Parliament to agree to these terms. This, however, was strenuously opposed by many, who declared that the projected line had not been properly surveyed, and that its cost would be overwhelming. No doubt, too, these good people fancied that it would be built in the massive style of the Old Country, not for a moment imagining that a railway which had to cut its way through a wilderness, and originate a traffic for itself where none previously existed, could be made in a comparatively inexpensive but efficient manner to suit present requirements. Not only so, but built with such rapidity as to make a living for itself at an early period, and thus quickly pave the way for future success. Sir John eventually carried his Bill for the construction of the line, and then, dissolving the House, appealed to the country for ratification of his policy, which the provinces accordingly sanctioned, and by thus giving the Government all the aid they could, immensely strengthened the hands of the Young Dominion.

In this manner the C. P. R. was enabled to spring into existence, and not only immediately benefit the whole of Canada, but the whole world as well, owing to its immense and ever-increasing proportions and wide sweeping influence at home and abroad.

British Columbia has an area of about 383,000 square miles, and an ocean frontage of 1,000 miles,

which makes it larger than any European country, Russia alone excepted, Vancouver Island, Queen Charlotte Islands, and a large part of the Archipelago of the Pacific coast being included within its bounds. Its trade is increasing so rapidly year by year that it has now assumed prodigious dimensions, and reaches to all parts of the civilised globe, with which, by means of excellent steamship lines, it has established direct communication. It is the western outlet for the whole of Canada to Japan, China, and the Far East; to Australia, New Zealand, the Islands of the Pacific; and also to the gold regions of the Far North.

B. C. is a very mountainous country, with intervening valleys of rich prairie, magnificent stretches of forest lands, and splendid waterways. Its natural resources in mines, forests, streams, and soil are numerous, diversified, and practically boundless. Its timber is unequalled in quality and quantity, some of the most wonderful trees in the world for size being found in this region, notably the cedar and the Douglas spruce and Douglas pine, for which there is a great demand.

The wooded area of the province is estimated at 285,000 square miles, and includes no less than forty kinds of timber. Its numerous mines, now undergoing rapid development, and its wide extent of country in process of exploration, still further indicate vast areas of mineral wealth. Its wide and fertile valleys exhibit wonderful agricultural possibilities, and its waters, containing prodigious quantities of fish, combine in the aggregate to give British Columbia a value which is now only beginning to be thoroughly understood, and which would have been so long ago if railway connection with the outer world had been available.

The whole province is now rapidly wakening up by

means of the ever extending development of its various resources. It offers splendid inducements to the home-seeker whether in search of a farm or of a mine. It is a country possessing great attractions for the persevering and industrious, and one, too, which offers many opportunities for all classes for the investment of money.

British Columbia is rich in *Rivers*, as well as in mountains and lakes. The first-named are chiefly represented by the Fraser, the Columbia, the Peace, the Thompson, and the Stikine. The Fraser is the great water-course of the province, and rises in the Rocky Mountains. After running for about 200 miles in two branches in a westerly direction, and then in one stream due south for nearly 400 miles, it heads for the great gorges of the western mountains. Then, passing through the stupendous cañon which bears its name, and also New Westminster, it flows onwards, and finally enters the Straits of Georgia after a total run of 740 miles. It is navigable for ships drawing twenty feet of water to New Westminster, and for river steamers to Yale, 110 miles from its mouth, and for still smaller vessels for about 60 miles further into the interior.

The Columbia, the third largest river in magnitude and importance amongst those of the North American Continent, has its source near the Rockies, in the south-western part of the province. From this point it runs north, and after circuitously winding around the Selkirks sweeps past Revelstoke in its southern course to the lovely Arrow Lakes, through both of which it flows to their outlet, where it is joined by the Kootenay and other smaller rivers. Thus, and otherwise increased in volume, it crosses the International boundary line, and running southwards for some hundreds of miles eventually enters the Pacific. Some idea of its immensity

FIELD, AND ENTRANCE TO THE KICKING HORSE CAÑON.

may be gathered from the fact that, with its numerous tributaries in Canada and the United States, it drains a territory of 500,000 square miles in area, and for a long distance inland is navigable by the largest ships.

The *Lakes* of B. C. are numerous, and sometimes as remarkable for irregularity of shape as for beauty and great depth. Its *Cities* are of the rapidly growing order, and will no doubt soon accomplish what they intend to perform. Its *Climate* is difficult to describe, as it varies considerably according to the locality. It may be said, however, that its seashore climate, chiefly in the Vancouver and Victoria districts, is milder than in many parts of England, and with less seasonal variations.

And now, returning to Field, one cannot help again referring to the fascinating Kicking Horse Cañon, which strikes west-bound travellers so forcibly because it is the first on the programme. The illustration on page 201 gives only a partial view of the town, so that the entrance to the pass and its adjacent peaks may be clearly seen, the gorge and river having at this point spread out into shallow flats. Fully fifty years ago, when Captain Palliser, Dr. Hector, and others were exploring these mountains, the horse of the latter fell into the river, and whilst the Doctor was trying to save the life of his noble animal, he was nearly killed by a severe *kick* in the breast, hence the extraordinary name.

As the line from the summit falls as much as 1,246 feet in ten miles, it may be interesting to know how a train coming down such a steep declivity on a mere shelf cut of the sides of vast mountains, and with several sharp curves in it, is protected from danger.

Firstly, then, all places such as this are watched day and night by "section men," who carefully inspect every yard of the locality, both on foot and by means of little

VICTORIA GLACIER AND HAZEL PEAK.

trolley velocipedes which rapidly traverse the line, and thus keep the path clear for every approaching train, not one of which is allowed to proceed until the signal is given.

Secondly, on entering a steep decline such as that of the Kicking Horse, an extra engine is coupled to the rear of the train, which, as well as the leader, has its machinery reversed, the carriage brakes being severely applied by the brakesman who is diligently on the watch. The driver, too, never takes his hand off the steam-valve lever, so that instant action is always available. All this time the train, at slow speed, is stiffly rolling and partly sliding down the line until it reaches the foot of the declivity, thus giving passengers ample opportunities for seeing and noting this wonderful region.

Field, in continuation of our previous remarks, is situated in the midst of lovely scenery. Looking down the valley from the hotel, the Ottertail Mountains rise to view on the left, whilst the Van Horne Range, with its cañons, and peaks, and snow-capped heights, and glaciers glistening in the sunshine, appear before us on the right. In the neighbourhood may be seen, in all their beauty, the Victoria Glacier and Hazel Peak, as shown in the view on page 203.

Upon leaving these scenes in the rear, the glacier-bearing heights of the Leanchoil Mountains, embellished in their foreground with pine trees and young silver birches, come before us in their loveliness; also the Kicking Horse River, now peacefully meandering onwards to the Columbia, which we shall soon "strike." Keeping in touch with the former for some distance, sometimes crossing deep chasms, at other times piercing rocky spurs in the mountains, we again proceeded westward. Quietly gliding through level park-like expanses,

studded with beautiful trees, and lakelets, and snow-fed streams, and with saw mills, and other industrial establishments, we soon enter a tremendous ravine whose walls, thousands of feet in height and miles in length, partially shut out the light. Upon reaching the mining town of Golden, nearly 2,800 feet below the railway summit of the Rockies, the gorge suddenly widens out, and we see before us a jagged series of snow-capped peaks which form a portion of the Selkirk range.

A wide and picturesque and well wooded valley intervenes, and through this flows, in peaceful fashion, and close to the line, the famous Columbia, with which we have now made our first acquaintance. Truly, this subsequently splendid river begins well, and practically foreshadows its future life, when the nature of the country and the distance it has to travel is considered.

I have now before me the finest large scale Government map obtainable of that part of B. C., which extends from its Rocky Mountain boundary on one hand, to beyond the Gold Range on the other, and from Quesnelle on the north, to the International Boundary on the south. As this map shows very clearly and fully every river and creek, and wagon road and railway, and lake, and town, and district enclosed by these boundaries, I am enabled to proceed with geographical accuracy wherever needed.

By this map we learn that the Columbia has not a mere creek origin like many of the others, but is the overflow of the closely united lakes Windermere and Upper Columbia; one of its principal tributaries—the Kootenay—being created by mountain fed streams in the same locality. Through this lovely valley, with the Rockies on one side and the Selkirks on the other, and with the river between them all the way, we travel

nor'-westerly for 17 miles, until we reach Donald, from which we proceed in a westerly direction for 11 miles to Beaver Mouth, where we at once enter upon new scenes of magnificence, and leave the river to pursue its long journey alone. Here, however we must make a digression which this fact renders necessary.

The usual custom amongst engineers, in planning a railway for a mountain region, is to take it along as many of .the valleys and river courses as possible, because the beauty of the scenery attracts passengers, and because it is constructively less expensive than if it had long tunnels, and cuttings, and embankments to traverse. Had the mountain part of the C. P. R., therefore, not been designed as it is, it might have been in many places like the "Glenmutchkin Railway" of early days, which, although twelve miles long, had *only* six miles of tunnels. Now, however, in one sense at least, we enter upon a change of principle.

How is it, some may ask, that this line does not, at Beaver Mouth, continue to follow the Columbia, and actually, by means of the most expensive works, cross the country by a series of mountains of stupendous altitude and overwhelming snow storms?

The reason is easily given. It would no doubt have been cheaper in one way to have followed the "Big Bend" to Revelstoke, and thus open out perhaps new sources of revenue along its banks, but, as the course by the river is about 150 miles, and by the overland route only 68 miles, the reader will see that, leaving primary expenditure out of sight, the cost of maintaining the line in good order was diminished in proportion to its length, and—what was absolutely necessary to obtain at all hazards for the sake of direct connection with Vancouver—the *length* was greatly diminished.

With these facts in view, the reader will have a few valuable hints in railroad design which may in some way or other prove useful. Also, he or she, it is hoped, will be all the better for having a few side lights thrown upon the practice of accomplished engineers, which in itself is a curious study. Practice which educates them to look at everything from a rail spike to a mountain pass in the keen, cutting, incisive, and comprehensive manner by which alone any professional undertaking can be made financially successful, and the safety and welfare of the public ensured at every point.

Continuing our journey, we enter the Selkirks by the gate of the Beaver River at a point where its torrent, surging through a deep and narrow gorge on its way to join the Columbia, is crossed by the "Devil's Bridge"—a tree so thrown across the stream at a dangerous place, that only a squirrel would dare to cross it.

Leaving behind us Six-Mile Creek, Cedar Creek, and others as we pass up the valley, we reach Bear Creek, which derives its name from the numerous bears which used to be, and, indeed, are still to be found in its gully. Here we are reminded of a story of Mr. G. A. Sala, when travelling across the middle of the great American prairie. On this occasion he met in one of the cars a very dissatisfied gentleman, who wished to impress most forcibly upon him the great difference between things as described in guide books and as they really are.

"There ain't," he said, "no bottlin' up about *me*. This overland journey's a fraud, and you ought to know about it. Don't tell me. It's a *fraud*. The ring must be busted up. Where are yer buffalers? Perhaps you'll tell me them cows is buffalers? They ain't. Where are yer prairie dogs? They ain't dogs to begin with, they're squirrels. Ain't ye ashamed to call the mean little

cusses dogs? But where are they? There ain't none. Where are yer *grizzlies?* You might have imported a few to keep up the name of your railroad. Where are yer herds of antelopes scudding before the advancing train? Nary an antelope have you got to scud. Rocky Mountains, sir? Where are they? Where are yer savage gorges? Where are yer wild Injuns? I can't see none. All a *fraud* sir."

The Selkirks have had a prodigiously rough time of it in days of yore, as their savagely torn, glacier scarred, and cascade gullied sides clearly indicate. We cross many of these handsomely steel bridged chasms on the road to the Summit, to which the line not only ascends from Beaver Mouth by an incline of 22 miles in length and 1800 feet rise in that length, but is actually notched into the precipitous mountain side for a great part of that distance, the Beaver river being left 1000 feet below us. Here nature has worked upon such a gigantic scale that even the wonderfully tall Douglas fir and cedar trees, which richly abound, seem to be dwarfed in size.

Soon after crossing the Surprise and other gorges we reached the Stoney Creek Chasm, which is the grandest of them all. The bottom of this, 296 feet below the rails, is seen to great advantage as we roll over the new steel built bridge of one span, shown in the view on next page, the train in transit being aided by an engine behind. So well known to Canadians is the original magnificent view showing the entire chasm with its river full of cataracts steeply coming down the middle of it, also the old trestle bridge, backed by mountain scenery, that I have given the latest, though least comprehensive illustration instead, for variety, and to show the line as it is now at this exquisitely beautiful spot. Here

STONEY CREEK BRIDGE AND VANCOUVER-BOUND TRAIN.

nature again becomes fascinatingly sublime, as we pass through a vast and narrow ravine apparently split out for us between the Hermit Mountain on the right and Mount Macdonald on the left, the latter towering overhead a mile and a quarter in almost vertical height.

Proceeding onwards, we reach that once impenetrable elevation mamed "Roger's Pass," which lies between two lines of gigantic snow-clad peaks. That on the north forming a prodigious amphitheatre, under whose parapet, 7,000 or 8,000 feet above the valley, several glaciers may be seen at once, and so near, that their crystalline fissures are clearly visible. Under certain atmospheric conditions, the changing effects of light and shade upon this cyclopean picture gallery of mountains can never be forgotten by the fortunate traveller who has witnessed the sunset or sunrise magnificently tinting their snow clad heights, or seen them exposed to the influences of storm and cloud. Some idea of this grand range may be obtained from the view of the Heart of the Selkirks on page 211.

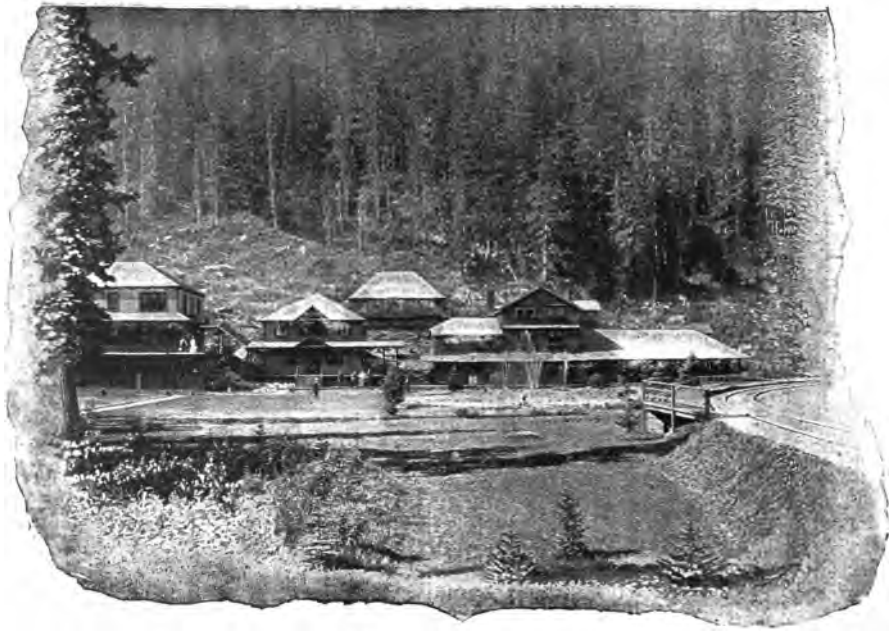
A run of three miles from this point lands us on the railway crest or "summit," at a height of 4,300 feet above the sea, after passing over, for the last 16 miles, one of the most impressive tracts of line to be found in the world, owing, not only to the extraordinary conditions of the country, but to the climatic and other obstacles which have been so successfully overcome. So heavy was the incline in some places that we required to have two engines in front and one behind to help us slowly up to the top, through show-sheds at intervals, men being stationed night and day at quarter mile distances from each other to keep the line clear from snow and stone avalanches which might unexpectedly come down.

THE HEART OF THE SELKIRKS.

It may here be asked why are these sheds not found in the Rockies, which seem to need them quite as much as the Selkirks? The reason is simply this. Physical as well as atmospherical influences existing in the latter have helped to produce an extraordinarily heavy fall of snow during the winter season, the heaviest recorded being one of 35 feet in height on their summit in the years 1886 and 1887. Eight and a half feet fell in six days, and for about three weeks snow was falling continually, consequently slides were very numerous. The warm Chinook winds from the Pacific, and the winter rains, followed at times by frost occasionally 30° below zero, made the snow extremely heavy. Avalanches of this nature, almost as hard as ice, irresistibly came down the mountain sides, charged with trees and rocks, thus greatly imperilling any railway which might be exposed to their destructive effects.

Cutting a series of tunnels would not only have been a very extensive and expensive, but a very slow and unnecessary operation. The C. P. R. Company, moreover, wished to make these mountains one of the show places of the world, and also to "boss" that show with all the enterprise, and economy, and safety they possibly could. The skill of their engineers was specially called into play, and in this manner the snow-sheds were originated, but how they were so cleverly planned and carried out will be shown in Chapter XVI.

On our journey down from the Summit we pass the great pyramid-capped Cheops, and the immense snow and ice covered Ross Peak. Close to us is the deep valley of the Illicillewaet River, "Sir Donald," the monarch of all in height, as well as the Great Glacier Mountain, and many others rising in front, and shortly our train will stop at Glacier House Hotel for half an hour.



GLACIER HOUSE HOTEL AND RAILWAY STATION.

The hotel, station, and other buildings, backgrounded by a dense forest, as shown in the view on last page, are typical of the numerous prairie and mountain edifices of similar nature throughout the land. Not only are these of cheap, rapid, and efficient construction originally, on account of the abundant facilities for obtaining suitable timber, but when much larger and finer buildings are required through the great expansion of traffic, they can be very easily removed. This locality is a favourite visiting one for tourists from all parts of the globe on account of the extraordinary beauty of its surroundings, which have only to be seen to be fully appreciated; some of the finest mountains we have passed, besides others to follow, being visible, and in some cases accessible from it.

With a very excellent and welcome 14·30 dinner in view, after the long sustained occupation of trying to learn the geographical and physical features of the country just travelled over, we end this chapter, the delightful records to which it refers being continued on next page.

CHAPTER XV.

End of the Selkirks—Kootenay Gold Region.—The Great Glacier—Curious Convolutions of the Line—Albert Cañon—Vast Mountains and Gorges again—Revelstoke—Vice-regal Cars at Station—Luxury of Transatlantic Travel—Off to the Kootenay Region—The lost 18,000 Mile Season Ticket—Fine Fix!—What next?—Arrowhead—Down the Lakes to Robson—Vice-regal Party returning—Lovely Lake Scenery—Robson to Rossland—The Mountain City—Its Gold Mines—Their Prosperity—Reception of their Excellencies—Authoritative Opinions of the District—The Episcopal Church—Nelson, another Mining Centre—Slocan River and Lake—Stern Wheel Steamer—Skirting a Colossal Precipice—A Mountain Tragedy—Silver Mine City of Sandon—Return to Revelstoke—Recent Innovations.

HE sublime region of the Selkirks, to which we have just referred, contains one of the wonders of Canada—the great Glacier—which, with its attendant heaven-piercing "Sir Donald," at once absorbs our close attention, the distance to the foot of the former being only about two miles from the station. This Glacier, measured over the summit, has a length of nine miles, only about four of which are visible from the line. Its depth in the middle, as estimated by eminent Alpine travellers, is from 3,000 to 4,000 feet, the fall of snow from year to year being from 40 to 45 feet. Hence, it will be seen that, were it not for the rugged and slide resisting bed upon which it lies, there might, long ago, have been an absolutely overwhelming

catastrophe, if there had been any town at its base to be destroyed.

Continuing our journey, we at once enter upon a very curious performance, which can only be seen to perfection in lofty mountain regions. "When I was a lad," in Edinburgh city, I frequently sailed sloops and schooners in a lake at the foot of the neighbouring cyclopean quarry of Craigleith. So precipitous were its sides, and so profound its depth, that its bottom could only be reached by means of a series of zig-zag wagon roads, which alone enabled carts, etc., to pass up and down. We have now entered upon a somewhat similar system of transit at the famous "Loops," so-called because, owing to the line dropping suddenly 600 feet in two miles of direct distance, a six mile length of the most extraordinary curves and bends became necessary. By this method, the natural slope of the line was reduced from 1 in 17½ to 1 in 52½, thus forming a highly successful piece of apparently impossible engineering.

These picturesque novelties we delightfully passed over, and at last reached the bottom of the valley of the Illicillewaet River, the source of which lies in the Great Glacier. As we wound about this valley, the colossal peaks already named gradually disappeared, others in the meantime looming in front. We next ran through several profound fissures in solid rock, the walls of which rose some hundreds of feet above us on both sides. Then came the Albert Cañon, where the river just named is seen nearly 300 feet immediately below the railway, now compressed into a raging torrent of only twenty feet in width. So much interest is attached to this spot, that trains stop here for a few minutes to enable passengers to view the locality.

Heading again in serpentine fashion for Vancouver,

gigantic mountains are passed. The western base of the Selkirks is approached. The narrow valley becomes another very precipitous gorge through which the railway and the river just find room. Beyond this, the line emerges into a comparatively level, and forest-covered space, and then, giving one grand swing to the right, lo! *Revelstoke*, the western gateway to the now rich, and prosperous, and magnificently picturesque Kootenay gold, silver, &c., mining region rises to view. So also does our old friend the Columbia River, looking all the better for his long tributary-aided travel from Beaver Mouth, where we last saw him. "Hail Columbia!" we again say.

Here the Happy Traveller landed for the night, with the object of doing, for the next few days, a little of the "Chiel" business in one of the most exquisitely attractive mining districts of British Columbia, to which great attention is now being paid.

At Revelstoke I had the pleasure of meeting Mr. Duchesnay, the Commander-in-Chief of the C. P. R. in that district, to whom I am much indebted for kind assistance. I also had the honour of overtaking the Governor General's car, which, all the way from Ottawa, I found at various points of landing, had left from one to two days in advance of me, and which clearly showed that I had made a good selection of stopping places.

On the morning after arrival, whilst viewing the exterior of this car, the officer in charge kindly invited me to inspect the interior, which I found fitted up in splendid style throughout. In short, the whole car was a miniature Government House on wheels, as far as very limited space would allow. On the drawing room table was a large collection of letters and papers awaiting their Excellencies' return from the Kootenay region,

which they were then visiting. These packets seemed to indicate that, although a Viceroy may be absent on what is supposed to be a holiday tour, his friends, far and near, conclude that his chief delight is to be fully occupied.

A beautiful feature of Transatlantic travel is the extremely handy manner in which one or more cars may be provided by a railway company to suit a varying number of people for a tour of any desired length, either for days or weeks together, and over, it may be, the whole continent of America and Canada. In this respect there is practically no limit either in time, distance, or magnificence. A millionaire, or indeed any person rich enough, for example, may possess a private car fitted up in regal splendour for his own use at any time. Independently of this, however, any party of people may engage one, the name of which may be *Seringapatam*, or *Massilia*, or *Heliogabolus*, &c., and with their own servants and provisions, and sources of pleasant occupation, musical, artistic, and otherwise, traverse the whole of the New World by stages of any length, temporarily lying, as desired, in railway sidings for local exploration purposes. Indeed, a great Railway Company may thus complimentarily treat its friends, as the New York Central and Hudson River Railroad proprietors did for a large party of ladies and gentlemen I met in the Rockies. A more delightful way of travelling it is impossible to conceive.

After leaving my card on the Governor General's table, I retired in time to catch the morning branch line train to Arrowhead, on my way to Rossland and other cities in the Kootenay region. Here, however, a very unpleasant incident happened which damped my happiness considerably for a time.

Before departure from Montreal, I obtained a first-class season ticket, which gave me the unrestricted command of the whole of the C.P.R. travelling resources of Canada, or, going and coming, of 18,000 miles. This ticket was not only commercially valuable, but it saved me all trouble at booking offices, and enabled me to stop anywhere I pleased, and for any length of time I liked, or to be on wheels straight ahead by night and by day for three months if desired.

When about three miles out from Revelstoke, the conductor came to me when standing on the outside platform, and asked me to show my ticket, as usual. Whilst, however, returning it *very carefully* to my pocket, a sudden jerk of the carriage and blast of wind combined whisked the card on to the line below as we rolled along at forty miles an hour. Fine fix to be in, with my Saratoga lying at the station I had just left!

Mr. Ogilvie sympathetically said—"Very sorry sir; can't be helped; the best thing you can now do is to pay your way until you reach Mr. Beasley, our representative at Nelson. Keep all receipts for payments, and Mr. Coyle, at Vancouver, will refund your fares. In the meantime I shall get the ticket cancelled, and keep a look-out on the way back, and if the wind has not blown it away, I shall find it, and get Mr. Duchesnay to send it to you."

Probably, at Montreal, 2,550 miles distant, this incident was known in an hour afterwards, as the Head Office people there know everything that goes on all over their lines with wonderful rapidity.

Soon after arrival at Arrowhead, at 9.30, I left by the stern wheeler of the same name for Robson, about 160 miles down the Arrowhead lakes. The day was magnificent. The scenery exquisite. Pleasant people, too,

were around me, but the event of the morning aggravatingly haunted me, as it was a silly performance on my part to show such a ticket outside, when I ought to have been *inside* the car. Near Nakusp, the vice-regal party approached in the steamer *Rossland*, and passed us so closely that I could easily discern the handsome figure of Her Excellency on the upper deck, and of course waved my hat as gracefully as I could under the circumstances. At the same time, I wished that the party had returned to Revelstoke the day before, as I was afraid the wind of the Viceroy's train, in full career, might blow my ticket into permanent obscurity, if not there already.

Canada, as previously remarked, is a land of rivers, and lakes, and mountains, in the highest sense. Nothing, however, can exceed for beauty the twin lakes we are now sketchily describing. They partially fill up a tremendous chasm, with lofty, snow-capped mountains on both sides, the scenery all the time changing as we wound about over sometimes very deep water. The Columbia followed us from Revelstoke to Arrowhead, and was now smoothly flowing through these lakes to its outlet at Robson, where, stoppages included, we arrived after an eleven hours' sail, and found a train waiting for us close alongside the steamer.

In a few minutes we were off to Trail—23 miles distant—the course being a very gentle decline, since all the way we had the company of our old friend, now wider, and deeper, and clearer than ever, and just a few miles from the International boundary line which it eventually crosses. Here, too, its volume was greatly increased by the waters of that large and beautiful river the Kootenay, which had now made a long tour through the country. From Trail to Rossland, a distance of only seven miles, we had to climb a vertical height of

about 1000 feet, by means of a series of steep slopes and zigzags, and curves of extraordinary nature. At Trail the zigzags were really what their name implies, without any end curves, for want of space, the engine merely pulling and pushing the train as required for each incline, until we reach the high level. It may be added that the whole of this region can now be more directly reached than formerly, by the Crow's Nest line, which has since been opened.

Upon arrival at Rossland I went direct to the Hotel Allan, and after breakfast had a general survey of the locality. From this I discovered that the Mining capital of Kootenay was picturesquely built on the side of a mountain which showed it to great advantage, its primitive looking streets already heading fast for modern improvements of the latest and best description. The Rosslanders were evidently quite as go-ahead in their ideas as in most of the western cities of Canada, which was clearly indicated by the fact that in 1894 the future City of the Mountains was a mere camp, and that in January, 1898, its population had not only become 8,000, but was rapidly increasing.

Since, from the hotel, I could easily see two of the most famous gold mines in the district—the "Le Roi," and the "War Eagle"—and as my main object in visiting Kootenay was to learn as much as possible concerning its mining operations for the benefit of my readers, I went up and interviewed their people. From the managers and others I learnt that their works were in a flourishing condition, and that, having long passed the experimental and vacillating stages, had now settled down to steady, profitable, and increasing outputs, notwithstanding the fact that all the ore had to be quarried in a pit and hauled to the surface, as with coal mining.

This made working expenses much heavier than at places like Klondike, &c., where the gold was obtained by merely washing and examining the gravel.

The Nelson people told me, when I went to see them, that Rossland was doing well, but that *their* silver and copper mines were also very successful. Whilst the Sandon authorities spoke out clearly upon the silver question, and said that they did better than Rossland, because they obtained much more metal with considerably less trouble, and so on.

Besides the above named mines, Rossland possesses many others close to the town and also to its railways. These include the "Centre Star," the "Columbia," the "Kootenay," the "Monte Christo," the "Virginia," &c., all of which were said to be more or less prosperous. Their Excellencies had, I found, been invited to a public luncheon at "The Allan" only two days before, and otherwise enthusiastically received. They had also been shown round the town and its various mines, down one of which—the "Centre Star"—*His* Excellency was taken on a visit of inspection. In the course of the afternoon, Lady Aberdeen delivered one of her charming lectures in the Opera House, which greatly delighted her audience, and gave a splendid opportunity for the ladies of Rossland to appear to the best advantage.

The various festivities were also largely attended by the most prominent people of the district, and many excellent speeches were given, and much authoritative information supplied upon local subjects. Lord Aberdeen, too, made some very felicitous remarks, amongst which, he referred to the magnificent scenery of the Kootenay, which he had not seen equalled anywhere in his travels throughout the world. He finally remarked, that both Her Excellency and himself would carry with

them to England the fondest recollection of the people of Canada, and of the manner in which they had been received everywhere.

The newspapers gave full accounts of the various speeches, and as I also obtained the most authoritative and favourable information from Mr. W. A. Carlyle, the Government Surveyor of mines, as well as from many others, I could only come to the conclusion that what every one said must be true.

On the Sunday morning I went to the little wooden Episcopal church, which has since been superseded by a stone-built edifice. The church itself was a model of simplicity, and its service not only equally so, but hearty and inspiring as well. So much so, indeed, that I infinitely preferred it to the too often gorgeously arrayed ones at home, to which I need not refer. On the whole, I was much pleased with the Canadian churches generally, so far as I could see of them in a limited time, and have, therefore, much pleasure in wishing them all prosperity.

Some of my Britannic readers may ask—"How about the ladies in that out of the way City of the Clouds?" Well, they are just like yourselves, quite as nice looking, quite as elegant in style of dress, and, to my mind, quite as attractive as many I have seen in the great cities.

On the day after my arrival at Rossland, I received a telegram from Mr. Duchesnay, at Revelstoke, saying that my "ticket had been found—where was it to be sent?"

"Mr. Beazley, Nelson," I replied, and so with this fact in view, I afterwards left for that city, simply by rolling down hill in the train to Robson, from which point another line carried us up the banks of the

Kootenay River, to the beautifully situated city of Nelson, which immediately adjoined a portion of the Kootenay Lake. This town is the seat of the Government of the district, and is capable of considerable extension. The city engineer, however, will have to exercise his skill pretty freely in street building and road carrying—as at gullied Rossland—and keep the *ladies'* portion of the pavement from becoming the most dangerous. Here I met Mr. Beazley, who not only handed me my lost ticket, but kindly put me in the way of meeting all the more influential people of the locality.

Upon leaving Nelson we passed along the banks of the lovely Slocan River to Slocan City, at the foot of Slocan Lake, and, after a brief interval, started by the swift stern wheeler *Slocan* for Rosebery, a considerable distance up the lake. The scenery was again exquisite, and, passing close to a bold shore line, I learnt that we had 800 feet of water below our keel.

Some idea of the lake scenery in this district may be gathered from the view on next page of the neighbouring Okanagan Lake, with the stern wheel steamer *Aberdeen* in the foreground. This is an extremely useful type of small-sized vessel, as she can run head foremost into any kind of lake or river bank, and take in passengers by means of a plank, or with ease cross stern foremost a shallow water sand bar, as the surging water from the wheel lifts her over it, and, amongst her other qualifications, can tow alongside at good speed, barges, boats, or anything else, indeed, that comes handy.

After a few stoppages we reached Rosebery, where a train was waiting to carry us up to Sandon, 3,000 feet above sea level. "Pon my wor-r-d!" or "*Oh my!*" I thought, with another Bear Creek gully in front of us

LAKE OKANAGAN—BRITISH COLUMBIA.

as we proceeded, this *is* a land of mountain railway climbing, and no mistake! Some idea of the wildly precipitous nature of the district may be gathered from the fact that a portion of the adjacent Kaslo and Sandon railway skirts for some distance the edge of a precipice whose depth is 1,050 feet, which, one would think, is enough to satisfy even the most exacting travellers.

Shortly after leaving Rosebery we reached the place where the conductor of the preceding train had stopped it, so that he might shoot a bear which appeared close at hand, the dead animal being immediately taken on board. This little incident suggested the following "lines," which are intended to express the feelings of the rifleman the moment before the fatal shot.

"I know full well"—he said,
"The bears are dying out,
And passengers too often
Do worse than sneer and flout.

So now, I'll fire my gun,
And cause 'em all to shout,
Since thus, the world will know
These beasts are still about."

He smartly raised his gun,
The bear turned quickly round,
Winked at him—sneezed—YEL-L-LD,
And fell upon the ground!

After passing many points of absorbing interest along the line, which, in some places, was richly bordered by splendid cedar trees, we arrived at Sandon, where I spent the night at the Hotel Reco, which was a much better one than might have been expected, considering the isolated nature of the district. Here, also, we found silver mining in a highly prosperous condition, and promising well for the future.

The position of Sandon is peculiar, as it lies in a gully between two mountain sides, where the mining operations are chiefly conducted, its picturesque beauty being considerably enhanced by the presence of a river in its midst which also proves useful. Some idea of the position of the residential parts may be gathered from the fact that, in order to avoid a long and rugged trail, they have in many cases to be climbed to by means of not less than one hundred steps before they can be reached.

Shortly before the time of my visit, the future city had been founded by means of a few miners' huts, and yet so rapidly had it advanced that its population had already become about 1,500. Here, however, only the best systems of work were employed.

On the return trip we again headed for Rosebery, continuing our journey by rail to Nakusp, on the Upper Arrow Lake, where we joined the steamer *Rossland* on her way to Arrowhead, at which in due time we arrived. The felicities of this voyage were greatly enhanced by the company of Mrs. Milloy, the wife of Dr. Milloy, of Sandon, and Mrs. Charman, of Nanaimo, Vancouver Island, both of whom had plenty to say, and said it well, too.

When on the line to Revelstoke I discovered that Mr. Ogilvie, the conductor of the return train from Arrowhead on the day I lost my ticket, had actually found it between the rails where it fell. Truly, these C. P. R. officers are very clever, no matter what they take in hand. It may be added, that nothing could have exceeded the kind courtesy and attention I received from all classes of them throughout the country, which, apart from all other considerations, have, no doubt, greatly enhanced the attractions of the line, and made it what it well deserves to be—a health resort for all, and especi-

ally a source of cheerfulness for the "Glum Grums" and "Squirmies" of society, if they will only allow themselves to be thus influenced.

Soon afterwards, I started for the still further west, and, crossing the Columbia, passed at once from the Selkirk Range into the Gold Range of mountains, which were to be amongst our next objects of interest. As engineers are trained to make their statements in mild, true and faithful, and diplomatic language, I am afraid that some may think my descriptions of the Rockies and the Selkirks much too tame, let me here, therefore, give a quotation from an *American* source regarding the Columbia River Valley to only a small portion of which reference has been made.

"The Rocky Mountains wall it on the east, and the mightiest ocean of earth laves its western shores for nearly 1,000 miles. It has snow-capped peaks, whose summits pierce the clouds to bathe in everlasting sunshine. Plains, whose limitless expanse suggests Infinity laid flat. Lakes, blue as the sapphirean skies that smile to see themselves so beautifully mirrored in their crystalline depths. Rivers like rolling oceans in magnitude and majesty. Far stretching forests, whose lofty tree-tops sweep the cobwebs from the heavens. Cañons that rank among the world's abysmal wonders," and so on, in more or less poetic language.

The very recent opinion, however, of my good friend, the Rev. Dr. Watson, of *Bonnie Brier Bush* fame, is perhaps as near the truth as possible when he says—"As we passed through the Selkirks and Rockies, so marvellous are the works of nature in this region for grandeur and beauty, that my wife and I have both agreed that nothing we had seen in Switzerland could be for one moment compared with what awaits the traveller

between Vancouver and Calgary on the Canadian Pacific line."

It may here be added, that so attractive have these regions now become, that the C. P. R. Company have lately introduced two novelties. One of these is the employment of Swiss Bernese guides to take charge of mountaineering parties, in which they have already distinguished themselves. The other being the inauguration of the "Imperial Limited," or Flying Mail Train, by means of which the time on the journey from Montreal to Vancouver has been reduced from five days six hours to 100 hours. A Sunday train has also been compulsorily employed during the summer to relieve the traffic which on Monday would otherwise be overcrowded with passengers from Europe.

CHAPTER XVI.

Mountain Features of Canadian Pacific Railway—More Peculiarities of B.C.—Fascinations of the Line—Its Construction—Unexpected Difficulties—Colossal Trestle, &c., Bridges—Crossing an awful Chasm—Curious aspects of Pile-driving—Mountain Railway Experiences—Crossing the Selkirks—Difficult Surveys—Snow Shed Protection—Gigantic Avalanches—Their Cyclonic Disturbances—Methods of Guarding the Line—Rivers in Flood—Wonderful Engineering Performances—Eagle Pass of the Gold Range—*Last Spike* of the C.P.R.—Shuswap Lake—Sicamous—A London Solicitor's Enterprise—Off to Vernon—Lord Aberdeen's Fruit, Hop, &c., Ranch—Their Excellencies at Home—Manager's opinion of the Farm—Great Capabilities of B.C.—Its Exquisite Beauties.

S the Canadian Pacific Railway bristles with engineering peculiarities, sometimes of the most fascinating nature, it may be well, in this chapter, to refer to a few of them. Especially when it is considered that, but for the highly skilful manner in which the various difficulties were overcome, the line would not only have been greatly delayed in construction, but hampered with enormous cost.

To many, the subject may appear dry-as-dustily deterrent, because it is so often treated in such a technical and learned style that few, indeed, can understand it, or even care to study it. I must, therefore, be very simple in my remarks, and try to infuse into them a little interest for general readers.

The leading feature of C.P.R. engineering is the fact that it differs very much from ours, the design and construction of the former having been of the simplest and least expensive nature, whereas the latter has been improved, step by step, as its traffic overwhelmingly increased, until it has now practically reached "last for ever," solidity and strength. When it is considered that previous to the year 1886, the whole of Canada, west of Ottawa, was an almost untrodden wilderness, out of which cities had to be sprung, and trade and commerce originated, then will be seen the wisdom of designing a line which would be cheap enough, and good enough, and quick enough of application under existing circumstances, leaving improvements and extensions to be introduced in due time as required.

To an "old hand," like myself, the study of this railway, from a professional point of view, as we rolled along, proved most attractive, as the movements which individually and collectively produced the results which were clearly visible on all sides could be so easily interpreted. The general inspection of the line showed that, with the exception of the Lake Superior district, there was hardly anything special to note in its construction, except the absence of the tunnels and embankments with which we are in this country so familiar. When, however, we entered the Rockies, and began to climb the mountains, we at once came in for peculiarities of line formation which are unknown in the British

Isles. Peculiarities, too, of such a marked nature that at one time no less than 35,000 men were necessarily employed in the two districts just named. It may be added that the pictorial initial of this chapter may well be allowed to represent a natural and most extraordinary rock bridge over a stream in the Rockies.

Whatever may happen to a railway during construction, its bed must be made so rigid in its foundation from the beginning that no sinking at any point or at any time must take place, for obvious reasons. In spite, however, of all that can be done to avert mischief of this nature, it will occasionally happen from unforeseen causes. Indeed, we may say, that between sudden depressions in a road bed which could not be avoided, and earth slides which were not desired, and quicksands which aggravated every one, and the presence of rock or water where it was not expected, and slushy, mushy, disintegrated strata which were most objectionable, and so on, the contractors and engineers have often had an exceedingly rough time of it.

Owing to the presence of enormous quantities of suitable timber in Canada, this material is used most extensively in the construction of railway foundations, and in every other possible way, including the formation of timber trestle viaducts instead of earth embankments. Its great value on a world-wide scale may be shown by the fact that the city of Venice is built chiefly on piles, not to mention other cities whose foundations are, to some extent at least, similarly constructed when located on bad ground. In the formation of docks, timber is invaluable, sheet piling being largely used for the purpose of enclosing water areas which have to be pumped dry, or tidally allowed to run dry, so that the works can be proceeded with.

Square piling is used most extensively in all sorts of wooden piers, wharves, etc., and in trestle, etc., bridges spanning sometimes awful gorges, some of which have been named, and which had thus to be primarily treated for the sake of cheap and rapid construction. Owing, however, to the recent great increase in the traffic on the line, these timber bridges are being rapidly superseded by those of steel, as the latter are not only of greater relative strength, but fire-proof, which is most desirable.

The scientific aspect of pile driving is a complicated one, experimental data being alone trustworthy, the theoretical reasoning on this subject, as given in technical literature, having occasionally been so complex as to puzzle and even mislead some of the best engineers. In these, as in other respects, responsible professionals are extremely careful, always bearing in mind that whatever wonderfully clever though sometimes abstruse formulæ may prompt them to do, *Theory* only holds the light—sometimes a very dim one—so that *Practice* may do the work.

Some idea of the obstacles which sometimes beset the construction of the C.P.R. may be understood from the fact that, in many places, the trestle bridge piles were not only sunk into lakes of various depths, but also through a soft, peaty bed, often from fifty to seventy feet in depth, and of such a treacherous nature as to give to all concerned an immense amount of trouble, and even occasionally cause unavoidable deviations from the true course of the line. Other difficult and most useful examples of timber construction are to be found in the snow sheds of the Selkirks, by means of which the most costly tunnelling was avoided. The manner in which the work was performed will be partially seen in the

view on next page of one of the sheds on the side of a lofty mountain, the winter track being inside, whilst the outer one is kept for summer use. These are admirably designed, and strongly built in every respect to suit the end in view. A special feature of their construction is the sloping of the roofs of the various sheds to line fairly with the mountain side, so that when an avalanche comes down upon it, it merely glides off, and, with the noise of thunder, falls into the valley below, if there is one at hand. In this case, we have a valuable application of a well-known law of nature.

During the time that the Union Pacific railway of the United States was being pioneered over the Rockies to San Francisco, it was discovered that the snowfall was so great in some places as very frequently to block the line altogether, and hence, engineers had to be stationed in dug-outs in the mountains for three winters with the object of discovering the points least exposed. When this was satisfactorily accomplished, the line was partially deviated.

In the Selkirks, where the snowfall is sometimes overwhelming, there is much to be considered in this respect, and, therefore, the engineers had not only to take extremely careful and laborious surveys of the locality, during which they were sometimes either half-starved or half-frozen, but, in addition, to study for years the various peculiarities of these snow-bound regions before anything could be done. In this manner, the best positions for the snow sheds were fixed. Further spots requiring these erections were found out from time to time, so that fifty-six sheds have now been built, the total length of which is seven and a half miles, exclusive of frequent breaks in their length which spread them out considerably. These open spaces isolate each

ENTRANCE TO A SNOW SHED IN THE SELKIRK MOUNTAINS.

shed in such a way as to act as most efficient fire-guards, and at the same time give variety to the passengers.

It may be asked how these unprotected spaces are kept free from snow in winter? Here, again, the skill of the engineers comes well to the front, as they designed massive "glance works" of timber on the immediately adjoining side of the mountain. By means of these an avalanche on its descent was so diverted from its course as to pass harmlessly over the sheds, instead of perhaps filling up the open space between them. In addition to this, the walls of these sheds have been made partially open on the valley side of the line, which not only admits considerable light to their interiors, but allows glimpses of the country as the train rolls onwards.

Some idea of the extent and nature of these snow slides may be gathered from the fact that they vary from those of small size and slow speed on a gentle slope, to the swiftly rushing and overwhelming avalanches which sometimes have been known to contain as much as about 190,000 tons of ice, snow, rocks, and trees mingled together in the most extraordinary fashion. When, too, it is considered that the first movement of these slides may arise on the top of a mountain from 4,000 to 5,000 feet above the line, which, on steep declivities will rapidly cause them to gather volume and momentum, and create at the same time, by their swift passage through the air, severe local cyclones, the unique grandeur of the scene may well prove fascinating to those who witness it in safety.

So well guarded, however, is the line at every point of danger that stoppages in these regions, which used to delay passengers for days together, have now been reduced to only a few hours even at the worst.

Amongst the serious perils to which mountain rail-

way passengers were until recently exposed, may be mentioned those due to rivers which had been greatly swelled by heavy rains and melted snow. Modern steel bridges, however, have abolished all these dangers, as they are frequently made to cross a river in *one* span, which is an immense improvement.

In concluding these brief remarks upon the Canadian Pacific Railway, I cannot help alluding to the exceedingly varied nature of the work, and the admirable manner in which it has been executed, even in its primitive stages, and still more so in recent times, when amendments all along the line, and especially in the mountain regions, have become general. To the engineers who conducted those works, the study of their frequently most perplexing requirements must have proved fascinating, as they involved so much of an unusually difficult nature, and also on account of the valuable experience thus obtained. To myself, they were highly instructive, and at all times a source of more than pleasure, as we rolled over bridges of every size and of every kind, either through or over lakes and rivers, or along notched out ledges on the sides of giant mountains, or over prairies, or, indeed, over or through anything else that came in our way.

And now, having thus described some of the physical features of this railway, let us proceed on our journey. The end of last chapter found us at Revelstoke, amongst snow-capped peaks of bold and lofty magnificence, looking so near, and yet so far away; now, however, we are off again on the main line.

As we cross the Columbia we enter at once upon the Gold Range, which is another series of glacier-studded mountains, so directly broken across, however, by cyclopean disruptive forces, as to give the train a com-

paratively easy run through a portion of them. The narrow Eagle Pass, which we now occupy, takes us for nearly forty miles between parallel lines of almost vertical and very lofty cliffs, into the faces of which the line is frequently forced by the Eagle River and by several lovely lakes, the bottom of the valley being thickly studded with trees of many varieties and of gigantic size. The *name* of the pass and river just given, is due to the fact that, when the engineers were surveying this part of the country, and did not know which of two streams to select for the route of the line, an eagle, by his flight, actually led them on the best track!

At a point twenty-eight miles from Revelstoke, we reached Craigellachie station, where, on 7th November, 1885, the last rail was laid, and the last spike was driven into the C.P.R. by Sir Donald A. Smith, the eastern and western ends of the line meeting here, which was the great event of the period. Proceeding onwards, we eventually clear the cañon, and are enabled to see before us the great and wonderfully shaped Shuswap Lake. The crystal waters of this are hemmed in by steeply rising mountains, which are clearly seen from Sicamous Junction, at which, on a narrow arm of the lake, we have now arrived. Here I landed with the intention of staying at the Lake View Hotel for the night, so that I could start very early next morning by a branch line for the rapidly rising and important town of Vernon, near which is the 13,000 acre ranch of Lord Aberdeen.

This beautifully situated hotel is under the management of Mr. and Mrs. Hooper, the former having been a London solicitor who thought he could do better in British Columbia, aided by his excellent wife.

He was a handsome man, and every inch a home

bred lawyer in appearance. Mrs. Hooper, too, although her hands were somewhat roughened by her occupations was a woman of elegant taste, pleasing manners, and refined discernment.

At 5.30, soon after sunrise, I left by the train on the Shuswap and Okanagan railway for Vernon, forty-six miles distant, and the chief city of a very charming country, where in due time I arrived, after a lovely run, on an equally lovely day. When I saw their Excellencies at Ottawa, Lady Aberdeen most kindly invited me to their "Coldstream" ranch, which is about four miles from the town just named. She also added,—"If you should be there before we return from Vancouver, Mr. Ricardo, our manager, will look after you."

All along the main line I tried to find out what was generally thought about this ranch from those I met. Firstly, on account of its great size, and secondly, because anything I had to say about it authoritatively might be useful to many. In answer to my enquiries people said,—"Oh yes, Lord Aberdeen's ranch is getting on nicely, but it has cost so much that we do not think that it will pay very well."

Upon arrival at Vernon, I found that the Governor General and party had only arrived the day before from the West, so, after breakfast, I started for "Coldstream House." As their Excellencies had not reached home till three in the morning, having been at a reception in town the previous evening, Lord Aberdeen sent me a kind note mentioning this fact, and saying that they hoped to see me in a little, but that in the mean time Mr. Ricardo would show me the place. The view on page 241 gives a clear idea of the house, with a few young fruit trees in front, and with a richly wooded background of pine trees, cedars, silver birches, etc.,

the prospect from the front being as shown to some extent in the next plate. Coldstream House may be considered a fair example of similar country residences of moderate size in Canada, the verandah being an indispensable appendage.

On meeting Mr. Ricardo, I found him a tall, handsome, gentlemanly man, without coat and vest, and *with* tucked-up sleeves. I also discovered that he was a representative of a good Devonshire county family, who was trying to open out a new career for himself in British Columbia. Keeping in mind what people had told me about the estate, I said to him in tentative style—"Ranch *prospering?*"

"Oh yes," he replied, "we are now getting on fairly well. We have spent a great deal of money on this business, but, as our fruit trees are only four years old, of course, not much can be expected from them yet. They are, however, beginning to pay, and will do better as they get older. Our hops are profitable, and so excellent in quality that, even in England, we get the best prices for them."

As we drove over a portion of this immense farm, I could clearly discern the elements of success, everything appearing to be so systematically arranged, and so practically carried out on scientific lines. The Governor General, it may be added, deserved great praise for, in this manner, endeavouring to encourage similar enterprises in the country, by showing the great capabilities of B. C. for at least fruit and hop growing, for which it is so well adapted, not to mention cattle and horse breeding, and sheep raising, which also form part of the work of the ranch just described.

As shown in the view of a very small portion of this on page 243, the arrangement of a few only of the

LORD ABERDEEN'S HOUSE, AT VERNON, BRITISH COLUMBIA.

12,000 fruit trees can be seen, all of which can be admirably irrigated when required. After a most interesting ramble, during which Mr. Ricardo was kindly attentive, their Excellencies appeared on the scene, and with them I had a very pleasant conversation until I left for Vernon to catch the train for Sicamous, which would enable me to join the main line to Vancouver.

The skies of Canada are remarkable for beauty, being chiefly of an unclouded blue, or mottled and freckled with lovely white, fleecy clouds, as shown in the view of the ranch, and others throughout this volume.

All the beauties of nature, celestial as well as terrestrial, are in these regions so strongly marked, and so exquisitely blended into one harmonious whole, that people who live in the great cities would do well to visit them for health-inspiring reasons, if for no others. So far, however, as mere scenic enjoyment is concerned, one is led to believe that there are few parts of Canada where more variety of a grand and easily accessible nature is to be found than those to which reference has been made in the last few pages.

LORD ABERDEEN'S FRUIT, &c, RANCH, AT VERNON, BRITISH COLUMBIA.

CHAPTER XVII.

THROUGH THE CAÑONS, ETC., TO VANCOUVER.—Glorious Sunset Views—Skirting Shuswap Lake—Thompson River and Cañon—Breakfast at North Bend—Fraser Cañon—Appalling Scenes—The Turbulent River—"Hell Gate"—Flood Rise of 70 Feet—B.C. of the Past—Sir James Douglas—Cariboo Road—Yale—Gold Discoveries—How the C.P.R. has affected the Province—The Cañons Past—Full Speed Ahead—Diverging Coast Range Mountains—Rich and Lovely Plain—Striking Burrard Inlet—Vancouver at Last—Forest in 1885—City in 1886—C.P.R. Ocean Mail Steamers—By R.M.S. *Empress of India* to Victoria—Her Description—Chinese Stewards—Their Full Dress Costume—Matchless Beauties of Straits of Georgia—Arrival at Victoria.

ON my return to Sicamous, as mentioned in the last chapter, I left at 19.20 o'clock by the main line train for Vancouver direct. The scenery we now passed through was, for the present at least, free from those awful chasms, and steep inclines, and cascaded rivers, and profound valleys, and ragged and jagged heaven-piercing peaks which we had so abundantly in the Selkirks and Rockies. Now, however, it was, although of a milder and more natural aspect, equally attractive in its own way, and still more so as the sinking sun exquisitely tinted the mountains

with lights and shades of gold and purple, and the glassy lake with reflections ever changing as he gradually disappeared.

For at least fifty miles we skirted the shore of Shuswap Lake, with its octopus-like arms embracing the mountains for long distances in every direction. After all I had previously seen of a truly sublime nature, I was nevertheless so fascinated by the ever-changing and lovely scenery around me that for hours together I gazed on it with delight until the evening shades prevailed, and eventually compelled me to retire for the night. Formerly the earth had been speaking to me, but now the heavens were shining in splendour, as they had so often done in other climes.

Devious as our course from The Gap had necessarily been, it had always something of west in it, that is N.W.—S.W.—W.N.W., and so on, but now the position of the pole star showed me that we were going *due north*, Klondike way in fact. I had more faith in the engine driver than to suppose for a moment that he had mistaken his course, and I was right. We had been swinging to many points of the compass since leaving Sicamous, but, as the map indicated, we had rounded the "Salmon Arm" of the great lake, and were only heading in the Dawson City direction until the valleys enabled us to turn round towards the west again.

From 4.30 in the morning, until near midnight, the 29th day of July had been one of continuously delightful incidents. Physically tired, I lay down on one of the seats to sleep sweetly, ready, however, after daylight to get up and scan the country we were rolling through. In course of time we struck both the south and north Thompson rivers, and, after skirting them unitedly for some distance, closely bordered Kamloops lake, and

then, calling at, amongst other stations, Savonas, Ashcroft, Spatsum, Spence's Bridge, and Lytton, where the Thompson joined the Fraser river, we arrived at North Bend Hotel, where we had an excellent and welcome breakfast. In half an hour, however, the usual warning of "all aboard" rang out in the clear air, the engine bell gave us ten seconds grace, and off we again started.

For many miles the main Thompson Cañon is extremely beautiful, with its steeply sloping mountain sides, varied in many places with scenes of weird-like magnificence, but not quite of the awe-inspiring nature we had previously seen and were soon to witness again.

At Lytton, we entered the world-renowned cañon of the Fraser River, which was greatly enlarged by the Thompson, and at Cisco, seven miles below this point, we crossed the Fraser by a steel cantilever bridge, a view of which is shown on next page. This gives a good idea of the now popular but very ancient system of construction, the hand worked trolley shown on the rails being used by the line hands for inspection and maintenance purposes.

For the next 45 miles we rolled through a part of the country which, for grandeur, so far as railway travelling is concerned, is considered to have no equal in the world. So fascinating was the locality that I at once found myself, along with many others similarly influenced, on a long spell of unwearied observation of marvellous scenery which became more and more "startling," "matchless," "terrible," "enthralling," "awful," and so on, as people delight to call it, according to the manner in which it impresses them. The illustration of the Fraser Cañon by moonlight, shown on page 249, will give a fair idea of one of the scenes of this cyclopean gorge.

CANADIAN PACIFIC RAILWAY, CANTILEVER BRIDGE AT CISCO.

Here the river is compressed into a very narrow channel between mountains which rise, sometimes like solid walls, thousands of feet above it on both sides. Consequently, at this point it is very deep, and capable of rising 60 or 70 feet in time of flood, when, with furious impetuosity and race-horse speed, it carries everything before it. Hence will be seen the necessity of having a bridge such as described, the piers of which are, in form and strength and carefully considered position, able to withstand anything.

The engineers of the line had another rare good time of it here between rock-drilling and blasting short tunnels through hard rocky mountain spurs on the one hand, and building stone embankments on the other hand, as shown in the view. At other times they had the pleasing variety of cutting and quarrying ledges to carry the railway on the face of prodigious precipices bordering the river, so that a practicable route could be made for the Montreal-bound train of the illustration, or for the Vancouver-bound cars by which I had the happiness of travelling at the time of which I am writing.

Just fancy yourself in a similar train, rolling along at a height of say 100 to 200 feet above such a river, with gully bridges, sharp turns, spur tunnellings, &c., in profusion. All the time, too, skirting the edges of eddies, narrows, surging rapids, whirlpools, and so on. After many miles of similar and, consequently, slow and very cautious travelling, we reached Hell Gate, where, owing to some large rocks barring the river, the passage of the water was something wonderful. During a time of flood, in 1894, the river rose no less than 70 feet, which greatly endangered the safety of the Cariboo road suspension bridge thrown across the stream a little lower down.

FRASER CAÑON BY MOONLIGHT.

Long before C. P. R. times the whole of the interior of British Columbia was a wilderness, unapproachable from any direction, except by scientific explorers who were willing to undergo great hardships for the sake of discovering the resources of the Province. These well directed efforts were the means of showing that the country was rich in minerals and other products, but had no means of approach to render them of any use. Fortunately, B. C. had then as Governor Sir James Douglas, the "King of Roads" as he was termed, a man of extraordinary energy, foresight, and ability, and formerly the distinguished commander-in-chief of the Hudson's Bay Company. After due consideration of the position of the Province from a mining, marketing and food supply, and every other point of view, Sir James conceived the happy idea of having trails and roads cut through the mountains wherever it was desirable, or even practicable. Thus was originated the wonderful Cariboo road, which, with its extensions in various directions, now reaches some hundreds of miles into the interior.

As we came down one side of the Fraser, we frequently obtained glimpses of this road, either pinned on the face of a giant precipice, or trestle-supported only at some of the most dangerous spots of the river. Occasionally, the track became much more natural in appearance, but in other places it had to wind about through cuttings in solid rock, and to severely rise and fall at points where, for many miles, hardly any level space could be found.

During the run from North Bend, I had the great advantage of having the company of my good friend, Mr. J. T. Moore, of Toronto, who, knowing well this part of Canada, was kind enough to tell me what he knew of its

ENTRANCE TO THE FRASER CAÑON AT YALE, B. C.

leading features, and laid great stress upon the previous value of the Cariboo road, which, for a long time, had been so beneficial to the country. After crossing the suspension bridge at Spuzzum, it ran alongside of our line for eleven miles, until it ended its career at Yale. Our approach to this little town was of a rather marked description, since only a short time before the great gorge had assumed a milder character by gradually opening out. Here, too, was the head of the navigation to the sea by steamers, as the river had now become placid and otherwise safe enough and broad enough to allow of their use.

The plate on previous page gives a good idea of the scene referred to, which to east-bound travellers, is the gate of the cañon from which we have just emerged. It also shews an Indian village in the foreground.

To enable people to comprehend the vast importance of the work carried out by Sir James Douglas and his successors, in road making, it may be well for them to imagine the position of the Province previous to 1864. Adventurers had discovered that the interior of this rich gold region was inaccessible, as it had not even a trail of the simplest nature, the whole Province being at that time a wilderness, and its people yet to come. In these early days, therefore, prospective miners had no other way of reaching the scene of their operations than by the most toilsome climbing of mountains such as those we have just passed through; by the crossing of rivers, and struggling through dense primeval forests; by paddling their own canoes across lakes, etc., and all the time carrying on their backs large supplies of food.

This, then, was the state of affairs previous to the year mentioned, when the Cariboo road was opened, and thus set a-rolling the ball of prosperity for B. C., until,

in 1886, the C. P. R. arose in gigantic power, and by gradually opening out the province, raised it to the high position it occupies to-day.

And, now, as we lie for a few moments at Yale station, it may be well to mention that all the savage gorges and Bear Creek Gullies which, at one time, were hardly traversable; the precipice skirting; the mountain climbing and chasm spanning; the giant inclines and declines; and wonderful loops, and curves, and other marvels of the line are all past. We cross several fine tributaries of the Fraser, and after a run of fourteen miles reach Hope, an important mining and trading town, with its Indian and Chinese, &c., population, and beautiful mountain peaks, and bottomless "Devil's Lake." The cañon has now greatly widened out, and we enter a rich, undulating, and beautiful plain, with the glistening snow-capped cone of Mount Baker, sixty miles distant, rising majestically to a height of about 14,000 feet, and with the Coast Range mountains receding on both sides of the railway. The engine driver opens his steam valve to the full, and now we are flying along the line with the end of our journey only eighty-five miles off.

Agassiz is reached, with its Experimental farm. So also is Harrison, with its prettily situated Hot Sulphur Springs Hotel, which is visited by invalids from all parts of the West coast.

At Mission Junction we found a branch line which runs to the International Boundary, and connects with railways to San Francisco and many intermediate places, and soon afterwards the line to New Westminster was reached. As the day was hot, everyone longed for the sea breeze, which, indeed, we were rapidly approaching. Station after station whizzed

past, and at last Burrard Inlet was struck. The delightful breezes of the Great Pacific were on us. The lovely mountains of Vancouver Island were in front of us. At Hastings we stopped amidst scenes of rare beauty on land and water, and at 13 o'clock—or 1 p.m.—our train smoothly rolled into Vancouver terminus to the minute, dead upon time, after traversing a distance of about 3,000 miles. As we arrived, the east-bound train similarly departed on its equally well-timed journey to Montreal.

After lunch at the Hotel Vancouver, which was to be my intermittent home for the next three weeks, I went out on a tour of general observation, and with this as a basis, combined with what I subsequently learnt, a little description of Vancouver may here be given.

Firstly, it may be said that previous to the year 1885, the place now occupied by this city was a wilderness of gigantic trees, some of them being fully twelve feet diameter a few feet above the ground, and from 300 to 350 feet in height, all of which had to be cut down and rooted out before a house could be built. An illustration of one of the giant cedars of Stanley Park is shown in the next plate, giving a good idea of their prodigious size and also of their interior, which, in this case, has been made hollow, although primarily filled with the usual rotten core which, when set fire to, may smoulder for some time unknown to anyone, and at last burst irregularly through the trunk. This tree measures 53 feet in girth a little above the roots.

The position of Vancouver was not only admirably selected as the best and most convenient spot for a seaport, but, owing to the configuration of the adjacent land, ample room was provided for future extensions on a great scale. Owing, too, to the large, deep, and land-

GIANT HOLLOW CEDAR IN STANLEY PARK, VANCOUVER.

locked nature of the harbour, plenty of space was allowed for shipping. Lastly, the situation is one of extreme beauty from every point of view, as the town is built on the side of sloping ground, with the lovely harbour and lofty mountain-covered Vancouver Island in front; the "False Creek" arm of the sea, and the city extensions beyond it in the rear; and, finally, the exquisitely beautiful Stanley Park, English Bay, and many other most attractive spots close at hand.

In view of the opening of the C.P.R., in May, 1886, the town had already made a good twelve months' start in timber-built houses, etc., all of which, except one, were destroyed by the great conflagration in June of the same year, but before the smouldering fire was extinguished, busy minds and active hands were again laying the foundation of the future great and splendid metropolis of the Far West. The people went so energetically ahead that by the next year the population had become fully 5,000, every train and every steamer that arrived increasing the number.

Electric light and power installations, tramways, waterworks, sawmills, factories, banks, and all sorts of public buildings, in timber at first, were rapidly proceeded with. Streets were carried through new parts of the forest, and inhabited as soon as their houses were ready, and so on incessantly, until, in 1889, the population had risen to 14,000. To-day it is about 30,000.

A splendid new and stone-built C.P.R. station has recently been constructed to meet the requirements of the greatly increased trade, not only from the east, but from the whole Pacific region by water on the west. This was primarily created in 1887 by the opening out of the traffic to Japan and China, by means of the three magnificent twin-screw R.M.S. *Empress of India*,

Empress of China, and *Empress of Japan*, each of 6,000 tons, 10,000 horse power, and 19 knot speed. In addition to these, numerous other ships belonging to the same and other Companies have been put on the Pacific station to Australia, Hawaii, New Zealand, Alaska, etc., as well as to all important points up and down the coast, and also on some of the lakes and rivers of the interior.

I myself was charmed with Vancouver from the first, as I went up the broad and very handsome asphalte-paved Granville Street to the hotel. On the morning after my arrival, I called upon Mr. E. J. Coyle, the Traffic Superintendent of the C.P.R. That *beam of light* was so pleased to see me that he most kindly offered to assist me in any way. After that, he began a conversation in such a cheery, lively way, as to cause one to think that the C.P.R. was the finest line in the world, and its officers the happiest of all, and that the Head Office people in Montreal were amongst the most profound students of human nature in existence, as, indeed, I had long before discovered.

The view on page 259 represents Vancouver Harbour, looking towards Hastings, and with the low-lying shore-line of Vancouver Island on the left of the picture.

The *Empress of India*, of which my good friend Mr. E. O. Murphy was the steam power commander, was to sail at 6.30 p.m. for Japan and China, and as Mr. Coyle had found out somehow that I wished to go in her to Victoria, eighty-five miles down the Straits of Georgia, he at once most kindly gave me a complimentary pass, which enabled me to treat the ship throughout in amiable "Chiel" fashion for a voyage of five hours.

Upon going on board, I found not only all the officers and crew elegantly dressed in white duck, but also the cooks and stewards, the last two named being

Chinese. Before dinner the stewards were clad in loose blouses and *breeks*, or trousers, their full dress, however, was what anyone would have termed a "night gown," but without collar as usual. Their pig tails hung gracefully down their backs, and were finished at the ends with stylish extensions of silk ribbon tied in bows. As they all spoke "pigeon English" I had no occasion to air the little I knew of the Chinese language, and so we got along first rate.

The interior of the *Empress of India* is truly magnificent, not only in design and embellishment, but in the manner in which the luxurious comfort of passengers has been attended to. The grand saloon is mainly in white and gold, with a beautifully decorated, arched and flower-gardened skylight, and additionally lighted and ventilated, as in other parts of the ship, by means of large square windows, as in the Peninsular and Oriental liners. The saloons and state-rooms are fitted with electrically driven fans and other appliances, so that they may be kept cool in hot weather. Indeed, so tropically is everything conducted that when you leave Vancouver Oriental customs reign supreme.

The promenade deck was spacious and well covered by the deck above, and by awning extensions fore and aft when required. Side and end awnings were also provided by means of which, in roller blind style, the whole of the deck could be transformed at any time into a very handsome entertainment or social hall, or Cave of Harmony, or any other scene of beauty. As the embellishments on such occasions consist of numerous flags, exquisite drapery, and an abundance of lovely and sometimes extraordinary flowers and plants, not to mention the charming company in evening dress, the scene may be better imagined than minutely described.

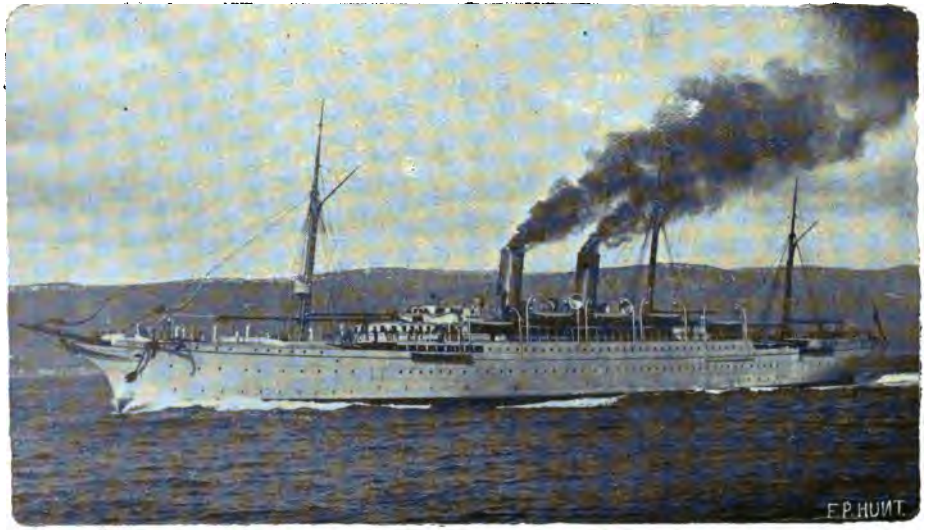
UPPER END OF VANCOUVER HARBOUR, LOOKING TOWARDS HASTINGS.

This vessel, as well as the sister *Empresses of China* and *Japan*, are of 6,000 tons each. They are all fitted as armed cruisers, and, with their twin screw engines of 10,000 horse power, attain a speed of 19 knots an hour. The view on next page shows the *Empress of India* going full speed, and illustrates very clearly her exterior arrangements. Her sides are painted white, because this colour is best suited to the tropics, and her extremely limited sail power results from the safety provided by having two sets of engines, three quarter speed being obtainable by means of one set alone in case of disarrangement of the other.

It may be asked why these vessels have figure-head stems, when those of the P. and O., Orient, Cunard, White Star, &c., have vertical ones? The reasons may be thus stated:—The ports on the Canadian Pacific Station have either open roadsteads or extensive wharf spaces, instead of crowded docks, hence the C. P. R. liners do not need to be rigidly shortened. Secondly, a figure-head stem gives an elegant finish to their bows. And-thirdly, and perhaps most importantly, the Company probably wished to pay a graceful compliment to the Eastern nations with whom they traded, and who would no doubt be delighted to see handsome representations of their reigning monarchs adorning these ships in such a conspicuous and attractive manner.

Under the salutes of very many friends on shore we steamed away in grand style towards the Land of the Rising Sun, and also the Flowery Land, or, to use another and more modern phrase, *Westward to the Far East*, because, upon reaching longitude 180° by going westward, in a moment, and without one turn of the wheel, the course becomes an easterly one.

The passage down the Straits of Georgia to Victoria



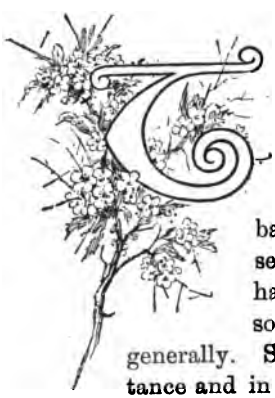
CANADIAN PACIFIC R.M.S. EMPRESS OF INDIA.

was one of matchless beauty. After clearing the Narrows off Stanley Park, we headed straight into a glassy sea of gold, and blue, and purple, and cats' paws, with a deep blue and fleece-clouded sky overhead, as the Straits gradually spread out to 25 miles in width. The Vancouver Island coast line, which we hugged, was charmingly broken up into numerous islands and islets amongst which we sailed. The background on the near side consisted of ranges of mountains from 6,000 to 8,000 feet in height, and on the other side were the receding coast range mountains of the mainland, with snow-covered, heaven-piercing Mount Baker—an object of great beauty—in the far distance. Amidst all these fascinations we sped on our way until the sun sank like a red hot plate into the ocean, and then the moon, raising her lamp above, silvered it to perfection until, at 11.30, we entered the harbour of Victoria to take in the latest mails and passengers, this being not only the last point of departure but the first of arrival for the ocean steamers sailing from or towards Vancouver. Here, however, I left the ship.

After this, she backed out for nearly two miles, and then swung round to the westward for a 50 mile run through the Straits of San Juan de Fuca, passing Cape Flattery in her course, and, entering at once upon the great Pacific, steered direct for Yokohama, her first calling station. And so, wishing them all a pleasant voyage, I retired to rest at the Hotel Dallas, with the lovely mainland 30 miles off in front, and part of Victoria harbour and Esquimalt in the near distance.

CHAPTER XVIII.

VANCOUVER ISLAND AND ITS PEOPLE.—Victoria, the capital of British Columbia—Its Origin and Development—Its Trade on Land and Sea—Popular Resort—Esquimalt—New Parliament Buildings of Victoria—Residential Parts of the City—Its Public Buildings—Social Aspects of the Victorians—A Ladies' Lawn Tennis Tournament—Their Style of Dress—Jealous of Vancouver—Why?—Useful Hints—An Awful Fire—Curious Results—Electric Speed Fire Engine System—Chinese Residents—Board of Trade Notes—Prosperity of the Province—A Delightful Visit—American Ladies—Character Sketch of them—Through Puget Sound to Seattle and Tacoma—Train Ferry Boat on the Columbia—Similar Colossal Systems—Portland and its Environs—Vancouver again.



HE Island of Vancouver has a very interesting history which dates back fully 100 years, Captain Vancouver having primarily discovered it—a band of sturdy, zealous, and subsequently distinguished pioneers having greatly developed its resources as well as those of B. C. generally. Since then it has grown in importance and in value. It is the largest island on the West Coast, being 300 miles in length by 50 in average width. Its shores, as well as those of the mainland for many hundreds of miles, have been cut and torn

up into numerous islets and inlets, as in Norway, which this coast much resembles.

The chief city of the Island, and indeed, of all British Columbia, is *Victoria*, which was originally known as Fort Victoria of the Hudson's Bay Company. This small settlement suddenly expanded when the excitement caused by the discovery of gold on the Fraser River brought multitudes of adventurers to the spot. These flowing and ebbing currents of people gave so much life to the district, that in the year 1858 no less than about 30,000 inhabitants were encamped around the fort. The gold excitement passed away, but it left a permanent population on the banks of the lovely harbour as a solid foundation for the future city of the West, to which we are now directing attention.

Up to 1886, substantial and handsome buildings gradually took the place of those of the primitive type. The opening of the C. P. R., however, accelerated these movements, until at last Victoria became what it is to-day—the capital of B. C., the seat of Government, and a city as remarkable for beauty in itself and in its surroundings as in the qualities of its people, all of which have made it a centre of intelligence and refinement of the most attractive nature.

The constantly growing importance of this city is due, moreover, to its close connection by means of various lines of steamers, with Seattle, Tacoma, Portland, and San Francisco, etc., to the south, with the mining districts of the Far North, and also with the countries and islands whose shores are washed by the great Pacific. It may be added that to the energy and talent displayed by the late Sir James Douglas, who was Governor of the Province from 1851 to 1864, much of its prosperity in various ways is due. Still more may it be

OUTSKIRTS OF VICTORIA FROM MOUNT TOLMIE.

said that, through the same and other influences, the riches of the island in gold and useful minerals, including coal, were discovered and worked upon, the value of the latter being gathered from the fact that at Nanaimo, seventy miles distant, the annual output now amounts to fully 1,000,000 tons, which finds a ready market far and near.

With these facts in view, it is only natural that not only does Victoria enjoy a very large wholesale trade, but is a favourite resort for tourists and others from all parts of the world. The Esquimalt and Nanaimo Railway Company's head-quarters are in the city, as well as those of various coasting steamship lines, and within three miles of its centre is the first-named Naval Station, which has recently been greatly enlarged. The main districts of Victoria are naturally within the city, the view on previous page, however, taken from Mount Tolmie, gives a good idea of its outskirts, of the mainland mountains in the distance, and also of the lower part of the Straits of Georgia, from which the Straits of San Juan de Fuca branch off on the right to the Pacific. Esquimalt harbour may also be seen across the bay on the right of the picture. The view of the recently built Parliament Buildings, shown on page 267, clearly indicate the importance of the capital from a Government standpoint.

In these magnificent and costly edifices I met with a most kind reception, especially by Mr. W. S. Gore the Deputy Commissioner of Lands and Works, and by Mr. R. E. Gosnell, the Secretary of the Bureau of Statistics, etc. The latter showed me round the whole of the splendid and newly finished interiors, and gave me at the same time the fullest particulars concerning the province, which I have here been enabled to draw

NEW PARLIAMENT BUILDINGS, VICTORIA, BRITISH COLUMBIA.

extensively upon, not to mention other sources of official and general information which were then and have since been placed at my disposal.

As the buildings referred to are of stone, and the grounds picturesquely laid out facing one of the prettiest spots of the city and harbour, it will be seen that these alone are a great source of attraction to visitors. As, too, the various inlets of the harbour add so much to the beauty of Victoria, we give on page 269 a view of one of these at Point Ellice, close to the residence of my good friends the Hon. Judge P. O'Reilly and family. The former has been a resident of British Columbia since he came from England in 1859, and perhaps there is now hardly anyone in the Province who knows it better than he does, having been one of its early pioneers.

In the most genial and happy manner Mr. O'Reilly on one occasion told me in a general way about his territory, adding, at the same time, that there was not much of it he had not seen. His excellent lady and their son and daughter, as well as himself, were as admirable specimens of elegant Victorian society as one could possibly meet. To me, they were most kind, and for their highly valued attentions I now thank them very heartily.

On the day after my arrival I called upon my good friends Mrs. and the Misses Pemberton, who were very pleased to see me again, and who, in course of the afternoon, kindly drove me through some of the most beautiful suburbs of their city, which I greatly admired. Taken all round, Victoria put me greatly in mind of Sydney harbour on a small scale, as its beauties rose to view from time to time as we rolled along, and as in other ways I afterwards discovered. The residential districts were well stocked with lovely and well-

"THE ARM," ABOVE POINT ELLICE BRIDGE, VICTORIA.

gardened villas, of which Mrs. Pemberton's "Gonzales" was one of the prettiest. The commercial parts, of which Government Street was the head and front, were rapidly advancing in splendour, as handsome stone edifices were being added, or had only recently been erected, such, for instance, as the splendid and most admirably situated General Post Office. An excellent electric tramcar system makes the city and its surroundings very accessible to all.

And now I come to a most delicate part of my subject, namely, the *social aspects* of the Victorians, in which I took the greatest possible interest for the geographical reasons previously given. I am grieved to think, but painfully constrained to believe that, for the same reasons alone, there are some perhaps in Britannic fashionable and merely novel reading society who fancy that the ladies I am now referring to are only beginning to emerge from a state of semi-barbarism. That they, until recently, were dowdies of the most pronounced type, whose ragged, tagged, and scragged hair fell in most disorderly style upon "dresses" which did not deserve the name. Dresses, too, which were stitched together by means of fish bone needles and grass made twine to keep them from falling to pieces. Boots—if any—fit for the dust heap, and hats and bonnets which were yet to come.

Now, what a highly distinguished honour it is for the Happy Traveller to stand as it were between those of the New and Old Worlds, and declare to the latter the true position of Victorian society as it is to-day, and as he himself delightfully found it!

Amongst other good things the Misses Pemberton said to me was—"You should go and see the Lawn Tennis Tournament which is now in progress, as all the

ladies of Victoria are attending it." I went accordingly, and after paying a half-dollar admission fee, was allowed to enter the enclosure, which was hedged about externally with carriages and bicycles. I walked in amongst the brilliant assemblage, and took a seat in the midst of them as an apparently innocent visitor without any particular *intentions*. Ah! little did they imagine that on that fourth day of August, 1898, the tall and handsome stranger in navy blue serge suit, and splendid black and white straw hat trimmed with black silk ribbon, was there to keenly criticise them in "Chiel" fashion for the purpose of reporting them to the world.

The game went on in splendid style. Bravo! Miss Revelstoke—well played. Oh, my! Miss Cariboo, you *are* a genius, and no mistake. Hooray! Three cheers for Miss Elmira Victoria—splendid!—splendid!!—but who is this I see before me? Nearly all the ladies were most appropriately dressed in pure white, and with *white kid* gloves, too, which in my young days in Edinburgh city would have been considered "VULGAR!! like *Glasgow*, you know." Fashions change, however. Well, amidst all these exquisitely attired ladies was one who crossed my field of vision wearing a fiery scarlet hat on a day hot enough, one would think, for comfort.

How different must have been our thoughts as our eyes met! What *mine* were she will know if she ever reads these lines, which contain nothing but lurking amiability and humorous but truthful criticism. My dear young friend, you and I may never meet again, but, as a lover of elegant taste at every point, may I be permitted to ask if you do not think that your otherwise beautiful costume would have been improved by the wearing of a lovely white straw hat, trimmed with the richest white silk ribbon? I fancy so.

I shall never forget that day at Victoria, because I had then the delightful pleasure of preparing a crushing answer to those who, for want of knowledge, spoke disparagingly of Far Far West feminine society, by considering it to be *now* what it was supposed to have been not so long ago.

In proof of this, I hereby declare that, having carefully noted the style and manners of the ladies of this region, I am of opinion that, for every quality which can enhance their attractions, the Victorians are quite equal, rank for rank, to the best in the Old Country. Especially those referred to who gave me such charming occupation on the day I had the honour of being in their company.

Alas! alas! for poor, weak, frail, fallen human nature, I found that even here, in one of the loveliest spots in the world, some of the people allowed *jealousy* to rankle in their hearts. Jealousy, too, towards a friend, and that friend *Vancouver!* They told me that Sir William Van Horne paid all his attention to the mainland terminus of his great railway, and neglected *them*, quite forgetting that, abundantly supplied as it is with natural advantages for trade and commerce, and the head of the navigation of many of the ocean and coasting lines of steamers, Vancouver is going to be the great Western seaport of Canada. It is only good generalship therefore to look well after this city, which is full of vast possibilities. Please to remember, then, my good friends, that what adds to the prosperity of Vancouver will benefit you in the long run, if not to some extent now.

Her rich people will make Victoria their alternative home, or temporary resort. "Flying Victoria" trains, aided by swift ferry boats, will carry them to and from your city. Palatial 20 knot steamers will aid the present

Empresses in transporting the élite of the world to you by water. Your commerce will expand. Your city will extensively enlarge its boundaries, and increasing prosperity will reign in the midst of your "Happy Valley" community, where unkind thoughts should never be allowed to enter.

Remember, too, that your city is the Capital of British Columbia—the seat of Government—the residence for all time of the Lieutenant Governor, and the seat of fashion for very Far West Canada. It will also become the seat of learning, and University training, and other things of a very important nature yet to be developed. Are not these sufficiently distinguished honours?

Please note these facts, then, ye short-sighted ones, and cast your jealousy to the winds. Be content to let the clever Sir William do what he likes, for he carefully studies the most minute as well as the most wide-sweeping features of his colossal undertaking, and knows best how to conduct its affairs successfully, and I am certain that you will be greatly benefited directly or indirectly as the days go by, and as you really deserve.

Amongst those I came to know in this region was the Mayor—Mr. Redfern—who introduced me to others of civic importance. He also kindly invited me to lunch at the "Boomerang." The *Boomerang!* 'Pon my wor-r-d! How that name sprung upon me, as by the lightning's flash, my early bush days in Australia, when, like my coloured brethren, I, too, was able to throw that wonderful weapon. While on the way down to the dining hall a strange circumstance occurred. The sky became filled with mysterious coils of greenish yellow smoke, and at the same time a most unexpected bombardment seemed to be going on in the harbour.

When we came to investigate the cause, it turned out that a large Chemical establishment near the sea was on fire, and burning furiously. It had shortly before received about 500 tons of nitrate and sulphur from abroad, which were stored in a building close to the water. As the barrels containing the former rolled into the sea, they not only exploded violently, but turned the colour of the water into a sickly green, and created the coils of smoke referred to, which, driven by the wind, deposited a damaging dust upon the clothes of people two miles off across the harbour. Taken altogether, it was a very remarkable spectacle.

Mr. Redfern also showed me the fire engine house, which, under the guidance of one of its officers, was fully explained in detail. As in all chiefly timber-built cities it is of paramount importance to have instant command of the fire-extinguishing appliances, it may be said that Victoria in this respect is well to the front. In view of sudden outbreaks, many of the inhabitants of the various districts have been drilled so efficiently as to know exactly what to do when required. Indeed, every man and woman on the street, or otherwise, has the power of instantly signalling the locality of the conflagration, even if it should be miles from the station-house, thus causing the fire-bell to be rung. The firemen, even if in bed, spring with almost electric speed into their clothes, placed beside them ready for the operation, and slide with equal speed down a pole to the engines on the ground floor. A bar, which kept the horses in their stalls, is at the same time automatically released to enable them to take their position at once, without a word being said, and so swiftly and silently is every movement performed, that in from only eight to sixteen seconds from the first stroke of the bell, the fire

engines and their crews are on their wild career through the town to save life and property.

Victoria is quite a favourite with Chinamen, who have a prosperous "Quarter" to themselves, and are very useful in many ways, especially in laundry and domestic work. Many of them are to be seen on the streets, all dressed alike, and very orderly in their conduct. I am sorry to say, however, that, instead of finding smart-looking housemaids at the homes of the people, I found *Chinamen* instead, as the ladies cannot now get any of the former to suit them. Really good young women would be treasured here, but, as it seems they are not to be found, the Celestials are employed.

From information kindly supplied to me by the British Columbian Board of Trade at this port, it may be concluded that the mining, agricultural, fishing, lumbering, shipping, railway, public works, and all other branches of manufacturing, &c., industries thrcughout the whole province are in an advancing and prosperous state, as one may well suppose, when the means employed to attain such results are studied in detail.

The two following views illustrate one of the greatest industries of B. C., and, indeed, of Canada, as very successfully carried on at Chemainus, Vancouver Island. The first of these, on page 277, shows a group of pine trees in the forest, the great size of which may be gathered by comparison with the rifleman in front.

The plate on page 279 shows a large number of logs which have been floated into position at the Chemainus saw mill ready for the operation of cutting up, which, from first to last, is very quickly and systematically performed. After being hauled up the inclined plane at the front end of the mill, the logs are fixed on the travelling roller-bed of a sawing machine, which

rapidly transforms them into square or rectangular beams, or into planks, battens, &c., in prodigious quantities, according to the requirements of purchasers at home and abroad. The mill itself is provided with machinery of the most improved description, and, in accordance with the usual practice in manufacturing operations, receives the raw material at one end and delivers it in a finished state at the other end ready, when sufficiently seasoned, to be passed down to the ships waiting for it.

British Columbia possesses the largest timber resources in the world, the fringe only of which has been cut. This will be best understood when it is stated that the estimated area under timber of ninety-five different kinds throughout the Dominion is 1,250,000 square miles, 75 per cent. of which exists in the province named. Also, that the total exports of wood and its manufactures from Canada exceed £7,000,000 per annum, nearly the whole of which is appropriated by the United States and by Great Britain in about equal quantities.

The plate on page 281 illustrates a wooded drive in Beacon Hill Park, which is a fashionable and delightful resort for the people of Victoria.

At 3 a.m. on the fifth day after my arrival at this city, I left by the ss. *Charmer* for Vancouver, where I spent a few days, and then left for a run southward amidst the beautiful islands and headlands of Puget Sound, calling at various places on the way to Portland. Amongst our passengers were two American ladies of San Francisco, who had been my fellow-visitors at the hotel Vancouver, but were now homeward bound, after a very pleasant tour through Canada, the honour of whose company I had all the way to Victoria.

PINE FOREST AT CHEMAINUS, VANCOUVER ISLAND.

Never have I seen anyone who could converse more attractively, speak more elegantly, and laugh more joyously and delightfully than Mrs. McDonnell and Miss West, a woman's or a girl's merry, hearty, and amiable laugh being to my ear as sweet music. Our conversation upon things past, present, and future, our travels, our surroundings, and, indeed, everything else, never flagged and never lost its charming interest to the end of our trip. We left the lovely islands behind us in succession. Crossing the broad and muddy sea-staining flood of the Fraser River at some distance from its mouth, we kept steadily to our course, and after a run of 5¾ hours arrived at 7 p.m. at Victoria, from whence we departed early next morning by separate steamers for our respective destinations.

Upon leaving the harbour at 8 a.m. by the *City of Kingston*, we headed for the Puget Sound cities, the first of which was Port Townsend—a picturesque little place built on the slope of a hill. Our next stoppage was at Seattle, a large, flourishing, and handsome city 90 miles distant from Victoria. As many of the streets were built on rapidly rising ground they, as well as the whole town, could be seen to great advantage. Just as we landed, I found a man and a female of the baser sort viciously quarrelling, which put me in mind of the well known quotation—"Man's inhumanity to *woman* makes countless thousands mourn."

Proceeding for 30 miles further down the very picturesque coast of Washington, we reached Tacoma, where I stopped for the night. In an elaborately descriptive publication, referring to this beautiful town, the following remarks are to be found.

"Tacoma, the Focal City—Nature's Gateway to the World's Highway of Commerce—An Ideal Location

FLOATING TIMBER, SAW MILL, AND SHIPPING, AT CHEMAINUS.

amidst Picturesque Surroundings — Beautiful Parks — Broad Avenues and Handsome Homes—If you would Learn How she has Progressed of Late, Read On." I not only did so, but traversed the city right and left, and up and down, its more or less inclined streets—so inclined, too, in some places, that *cable* instead of electric cars had to be employed, otherwise, even with severely braked wheels, the vehicles would dangerously slide down hill. Tacoma certainly is a large, handsome, very prosperous, rapidly growing, and most admirable land-locked seaport, which is being extensively used by ships and steamers of all sizes from every part of the Globe.

Next day, during the run from this city to Portland by the Northern Pacific Railway, we again struck my good old friend the Columbia, now a mighty river. When we reached Kalama, the train was divided into three parts, and taken on board a very broad steamer which carried us bodily on her deck over to the other side to connect with the main line, which was very simply and beautifully accomplished. In Transatlantic countries this is a very popular method of train transportation, not only across rivers and harbours, but also on lakes; Michigan being thus crossed at a point where it is as much as sixty-two miles in width. The latest improvement, however, consists in stowing whole trains of both passenger and freight cars in the *inside* of specially constructed twin-screw steamers, such, for example as the *Père Marquette*, on the lake. The length of this ship is 350 feet, breadth, 56 feet, and speed, 15 to 16 miles an hour; she is also, like the others mentioned, a very powerful ice breaker. This system owes its economy and rapidity in working chiefly to the fact that the great expense and delay caused by the breakage of bulk due to transhipment is avoided.

WOODED DRIVE IN BEACON HILL PARK, VICTORIA.

I found Portland a well-built city of 90,000 inhabitants, located on the banks of the broad and deep Willamette River, twelve miles from its junction with the Columbia. Not only is it beautiful in itself, but also in its far and near surroundings, which include four gigantic snow-covered mountain peaks up to about 14,000 feet in height. It is also a splendid river port, and the metropolis of a vast and immensely rich area of country.

Upon leaving Portland, I returned to Victoria, and after spending another day there left next morning at 2.30 a.m. for Vancouver and its adjacent district, on a final visit before going east. I had thus the opportunity of seeing and learning much about the province which hitherto I had not been able to obtain. Besides this, I had the pleasure of being introduced to new combinations of peculiarly blended light and shade I had not witnessed before, which was very instructive.

CHAPTER XIX.

From West to East.—B.C. in Smoke—Burning of Vancouver in 1886 — Awful Scenes — Swift Re-construction and Extension—New Westminster and its Industries—Its Destruction by Fire in 1898—Canadian Sea Connections with the British Isles — C.P.R. "Around the World" Tours — More than Himalayan Scenery of the Pacific Bed—A Cyclopean Submarine Valley — Alternative Trans-Continental Routes — Return Trip from Vancouver — Across the Mountains to Glacier House and Golden—Fifty miles on a Cow Catcher through the Rockies—Kicking Horse Cañon under Evening Shades—Glorious Experiences—Line Hands at Work—On the Prairie Eastward bound—Victoria to Montreal Surprise Party in the Train—Moose Jaw again—Heading for Portal—Curious Incidents on the Line—An International Boundary Experience—Arrival in Minneapolis.

N returning to Vancouver Island, I found that the scene had become greatly changed. Instead of clear air, and sharply defined mountain ranges, I came in for bush-fire smoke and haze, which obliterated most of the beauties of nature. During the run from Victoria, the mainland was invisible; we could, however, see some of the fires in the distance, and also those close at hand on Vancouver Island. The results of these and other conflagrations kept us company on the east-bound trip for a considerable distance. Fortunately, I ran the length of my tether on the outward journey so

faultlessly that I could well bear the change, as it gave me fresh experiences of the country.

Now, why should these devastating fires occur at all? No one wishes them. The fact is, that they are chiefly originated by people who burn the dry grass so that they may have fresh grass for cattle, or, as is frequently the case, for land clearing purposes, or accidentally by camping parties. Sometimes the flames get beyond their control, and perhaps resistlessly devastate a large tract of country. During a twelve mile run from Vancouver to New Westminster, we passed the blackened remains of large numbers of once splendid trees from four to about seven feet in diameter, which most effectively told their story, and as the land was being partially covered by a new growth of timber, the contrast was very striking.

One of the most interesting spots in the district to which I paid a visit was the last named city, which is beautifully located on rising ground on the right bank of the Fraser River, fifteen miles from its mouth. This city was founded during the local gold excitement in 1858, and lies in the centre of a valuable tract of country. It is easily accessible from the sea, from the C. P. R. main line, and also by an electric tramway from Vancouver. New Westminster is chiefly famous for its salmon and lumber trades, it is, however, now being extensively aided by the agricultural resources of the surrounding district, which are rapidly expanding.

The extent of the salmon business may be best understood from the fact, that out of a total of sixty-seven canneries for the whole province, forty-three are situated either in the city or within easy reach of it. One of these belonging to Messrs. Cleeves greatly impressed me, not only by the simplicity and mechanical

perfection of all its operations, but by the great rapidity and cleanliness with which they were carried out, from the cutting up of the fish to the tinning, hermetically closing and finishing, and packing ready for transport by land or sea. The men who perform this work are almost entirely Indians of the province and Chinese, who work together very satisfactorily.

New Westminster has splendid systems of water-works and electric lighting, and possesses the finest public library west of Winnipeg, and also a capital public market. Fifteen churches, several schools, and various other public buildings, including a provincial penitentiary and asylum for the insane, are here located. Sad to say, these remarks only refer to the city as it *was* when I saw it, for within three weeks afterwards the town caught fire on a windy night and was swiftly reduced to ruins. Since then, a newer and much improved New Westminster has arisen.

Before leaving Vancouver on the homeward run it may be well to mention some of its connections with the world by sea. Not only does the Canadian Pacific Railway Company carry passengers throughout Canada over 9,000 miles of railway, but by means of its three *Empress* ships and other steamers, enables people to take one of the well-known *Around the World* tours from Vancouver and Victoria as western starting points. The success of these globe circling excursions has been so marked that the Company has arranged, by means of its ever-increasing connections by land and sea, to provide the public with new routes—now fifteen in number—which include stoppages at many of the most beautiful and interesting spots in the Pacific and Indian oceans, etc.

As twelve months is the time allowed for the use of

tickets, and stop-over privileges are given for as many points of interest as possible, it will be seen how delightfully people may thus spend their time in travel, and all the more so owing to the facilities given for going one way and returning by another, London being nominally the European point of departure and home arrival, one example of which will be sufficient.

The passenger, on leaving Euston Square or St. Pancras Station for Liverpool, or Waterloo Station for Southampton, may proceed, on arrival at either of these ports, to Montreal by one or other of the finest steamers afloat, *via* New York, Boston, Halifax, St. John, N.B., Quebec, or to Montreal direct, according to preference.

The Allan liners and the Dominion ships are too well known to need comment, so also are the vessels of the Cunard and White Star Companies. The latest innovations, however, on the Canadian route, have been the introduction by Messrs. Elder, Dempster & Co. of new passenger and cargo steamers up to 11,500 tons carrying capacity. These ships run between London, Liverpool, Bristol, and Montreal, and their owners have recently contracted to carry the mails.

The newest and largest Allan liner is the *Bavarian* of 10,200 tons and about 18 knot speed, whilst the immense and splendid *New England* of the Dominion line runs her passengers to Boston instead of to Montreal.

The greatest and most magnificent steamer in the world, however, is the new *Oceanic*, of the White Star Company, the length of which is 704 feet, breadth 68 feet, tonnage 17,274, and power sufficient in all states of the weather to enable her to land her passengers either in New York or in Liverpool every Wednesday morning with railway-train regularity.

It may be added that this ship is 24 feet longer than the late *Great Eastern*, and of much greater tonnage, while, at the same time, she is a beautifully outlined vessel. As each of her oval funnels is large enough to allow two full-sized tramcars to pass through it side by side, some idea of their immense size may be formed.

Once on Canadian territory you may do as you please, and either traverse the continent straight ahead to Vancouver, or stop at any desired places as previously described. On arrival at Vancouver, the R.M.S. *Empress of Japan*, or of *China*, or of *India*, will probably be waiting for you, her first point of call being Victoria. From this, after passing the Fuca Straits, the ship will steer for Yokohama, nearly 4,300 miles distant, which, with other cities, such as Tokio, Nikko, Kioto, Nagasaki, etc., and very numerous natural objects of great interest, and also the people themselves, will form delightful studies to the tourist.

From Yokohama the ship proceeds 1,191 miles amongst the beautiful islands of Japan, and across the Yellow Sea to Shanghai, where the French, and the Americans, and the British are to be found in large numbers, and full opportunities are given to visitors to see and know everything in the most pleasant manner.

After a run of 810 miles from Shanghai, the British Colony of Hong Kong is reached, where travellers are most kindly received. Here, too, you will have the choice of two routes, one being by the Peninsular and Oriental, Orient, or other steamers, to Sydney—5,300 miles distant—or to Singapore, which is 1,437 miles off.

From the latter the return route to Europe is by Penang, 381 miles distant, and from thence 1,274 miles to Colombo, which is another stopping place for steamers from or to Australia. After a run of 2,093

miles from Colombo, we stop at Aden, where that pretty piece of music "The barren rocks of Aden," might be very suitably played by some lady in the music room of the ship. "The roasting heat of Aden," being an appropriate song which has yet to be composed.

Continuing our voyage up the Red Sea for 1,395 miles, we reach Port Said, and from here—calling at various Mediterranean ports—we eventually reach London, after traversing a final distance of 3,570 miles. It may here be well to remark that all these nautical miles are of 6,080 feet in length, the statute or land mile being only 5,280 feet.

Thus described, we have only given one of the grand and extremely diversified Round the World tours referred to, another of which, for example, may be from Vancouver by the Canadian-Australian mail steamers to Sydney, via Honolulu, etc. On this, and other routes connected with it, passengers can avail themselves of the ships of the North German Lloyd, the Shaw, Savill and Albion, the New Zealand Shipping, and other companies, the cost of transport by which is included in the Round the World rates, which range from £120 by the Yokohama, Hong Kong, and Colombo route, to £161 by the Sydney passage, and variously between these amounts for other excursions.

Besides the beauties of nature in all their loveliness which appear above water, it may be interesting to the voyager to know that *underneath* the surface of the Pacific, over which he or she may sail, are to be found numerous mountain ranges and peaks considerably transcending in magnificence the loftiest of the Himalayas, as the results of recent surveying expeditions and a careful study of numerous Admiralty chart ocean soundings have abundantly proved.

By these it may be learnt that if we could traverse the dried-up bed of the Pacific we should find in some places mountains rising, on one or both sides of us, to over 30,000 feet above the ground we stood upon, and amongst other marvels which stud the floor of this unique ocean, is a cyclopean valley, and gorge, and cañon combined, of profound and very irregular depth, which, for 1,500 miles, winds in S-bend fashion amongst the Philippine and other island groups adjoining the China Sea. So much for volcanic agency, of which the Pacific regions are quite a hot bed.

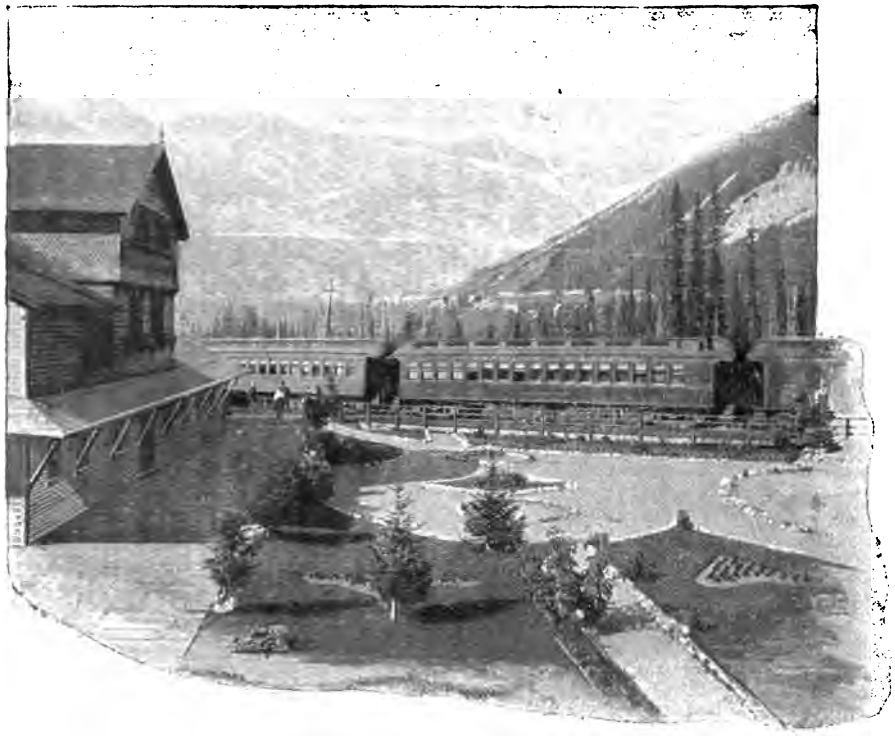
Before passing onwards we may add that European, etc., visitors to the West Coast alone, may, for the sake of variety, traverse Canada by Banff to Vancouver, and then down to San Francisco by the lovely Shasta route, returning by the United States to New York, or to any other eastern port. An alternative trip, however, is by the new C. P. R. line through the gold regions of Kootenay, and across the mountains via the Crow's Nest Pass route to Medicine Hat, Assiniboia, on the main line. Branching off at Moose Jaw, the homeward run may be, either partially or wholly, through the United States, as may be gathered from the map, and also from the remarks concerning my own tour from Portal to Detroit, which are given in the next chapter as well as in a portion of this one.

My last day and last hour at Vancouver arrived, and after waving my adieus to those who so kindly came to see me off I found myself amongst the East bound on the main line. We left Vancouver at 13 o'clock, and passing the spots previously described, and many others not referred to, reached North Bend in time for an 18·20

dinner, which was very welcome. Proceeding onwards during the night we stopped at Revelstoke in the morning, and at 10·35 arrived at Glacier House where we remained half-an-hour. As may be seen in the view on next page, the eastern background of this lovely spot consists of mountains yet to be passed in succession as we proceed.

Here I had decided to have a run down the Selkirks on the cow-catcher of the locomotive, and accordingly obtained a piece of cotton waste from the fireman for the purpose of cleaning up that part of the engine. With this project in view whilst passing along the station platform, I met unexpectedly, amongst the fashionable crowd which had come out of the hotel to meet us, my good friend Miss McKenzie Grieve—late of Edinburgh—who was now on her outward trip round the globe. So leisurely and delightfully was she performing this tour, that, after travelling over many hundreds of miles of British Columbia, etc., since I last saw her at Banff, I now found her only 137 miles further on her journey; thus eloquently proclaiming the attractions of the Rocky and Selkirk Mountain beauty spots. Miss Grieve's conversation was so charming that we only parted as the train rolled off.

"Now," I thought, "our next stop will be for dinner at Golden, but I must neither eat nor drink until I have run the Rockies in my own way." When we reached that point at 14.45 o'clock, I at once began to rub and polish up what was to be my seat on the buffer beam and cow-catcher, in the presence, too, of people who seemed to consider me a curiosity, or at least an object of special interest. When I wish a thing well done, I do it *myself*, and in this little matter admirably succeeded, and at once took my position ready for a start.



CANADIAN PACIFIC TRAIN AT GLACIER HOUSE STATION.

Here, however, I was informed by the driver that "no one was allowed to sit on his locomotive."

"*Indeed!*" I said, in an apparently high and mighty, injured emperor, but lurkingly humorous style. "Would you kindly read that letter and see what it says." He did so.

After gazing at the document from various points of view, and mentally trying to investigate the cause of this most unusual, and, to inexperienced people, very risky movement, my professional brother returned it, saying, "all right sir," and in a few moments we were off.

Never in my life had I a more memorable journey than that upon which we entered for what proved to be a fully fifty mile run through one of the wildest parts of the Rockies. The day was one of sunshine and splendour throughout, and the air was so clear that the mountain ranges far away and close at hand, seemed to cleave the heavens with a sublimity only to be found in similar regions. We began mildly after leaving Golden and the Columbia behind us, but in a little time the scene changed to one of fascinating grandeur as we rolled towards Field, and entered the Kicking Horse Valley, and then the Cañon, which closed in upon us as we passed up the steep incline previously mentioned.

So heavy was our train, and so difficult the transportation at this spot, that we required to have one engine behind to push and two in front to pull—the Happy Traveller leading. It was a *business*, and no mistake! to climb the side of that terrific cañon, but we at last did it very successfully. Such scenes of magnificence and absorbing interest, exquisitely shaded and tinted by the rays of the sinking sun, rose to my unobstructed view, which, owing to the slow speed of the train, I had plenty of time to gaze at and admire.

One of the most fascinating of these was the stupendous Mount Stephen, whose sublime and rugged head rose from the rail level at least 8,000 feet almost above our heads, into the clear blue sky, as we passed it on our course. Here we had a splendid view of a great glacier on the mountain side which, filling an immense ravine, was pressing slowly forward over the edge of a vertical cliff of prodigious height. From the line we could see a section of it 500 feet in depth in the middle, and sheared off at the edge of the precipice as exactly as if cut by a knife. As this Kicking Horse Cañon has already been described, no more need be said about it, beyond the mere fact that, amidst the most lovely surroundings continuously in sight, we eventually reached the summit of the Rocky Mountains, and came down this side of them, at a speed of 50 miles an hour, towards Laggan, during nearly the whole of which time I had to hold on to the utmost to keep myself from being shaken off. All the more so, too, as my seat had become much less secure owing to the declivity we were now traversing in grand style.

Socially speaking, I had a good time of it all through, as the driver and brakesman came in turns to see how I was getting on, and, seizing the hand-rail of the boiler, stood beside me to have a chat for a minute or so, which greatly pleased them. As evidence that I have not forgotten their kindness and attention on that eventful 19th day of August, 1898, I hereby report them to the world, and wish them all happiness and prosperity in everything they undertake.

I also had my own little polite acts to perform towards the line hands, whom I found carefully maintaining in good order the permanent way over which we ran so safely, their lonely cabins, and tools, and appli-

ances of all kinds being within easy reach. Whenever I met any of these good people I saluted them in Governor-General style, which, in their own manner, they delightedly returned. Thus, from every point of view, my cow-catcher trip seemed to benefit all concerned, and will, I hope, prove specially interesting to the reader.

On reaching Laggan I returned to the car to be ready to land at Banff when we arrived, as this locality was again to be my residence for the next three days, and charming days they certainly were to the end of my visit. At last the beautiful spot was left behind as our train departed for the East. The shades of eve were falling fast. The Bow River was again our companion for a time. The mountains receded gradually and bodily. The Gap was reached. The foot hills were passed in succession, so also was Calgary about midnight, and, eventually, we were out upon the open prairie with darkness all around, and a clear starlit sky overhead.

Next day I discovered two ladies in the train who proved to be most genial and attractive in conversation, my only regret being that I did not know them sooner, as I was so busily occupied in recording the most recent events of travel. They came from Victoria on a "surprise" journey to Mrs. Molson, of bank fame, in Montreal.

"What will you do," I said, "if Mrs. Molson is not at home?"

"Oh!" replied Mrs. G——, "we'll go to Ottawa and come back." Miss G—— quite agreeing. This was said in a way which showed, as I have often found, that transatlantic people think nothing of a long or even a very long run by rail, as the internal arrangement and

comfort of the cars are so great as to cause them to feel quite at home under all circumstances.

As Sir William Van Horne had kindly sketched out for me my return trip through the United States, *via* Minneapolis, St. Paul, Chicago, and Detroit, before crossing at this point again into Canada, I had, regretfully, to part with my good friends at Moose Jaw, from whence I branched off in a south easterly direction to Portal on the International Boundary line. Soon afterwards we left the fertile belt behind us, and entered upon a vast, flat, treeless, barren, uninhabited, and uninteresting plain whose only limit seemed to be the horizon which now encircled us.

Onwards we rolled, hour by hour, with nothing to break the monotony of the scene. At last, something caused the train to stop for no apparent reason in the midst of a desert. I found, on inquiry, that through some twist to which one of the axles of the baggage car had been subjected its right hand bearing had become extremely hot. In the presence of many who had come to see the show, the end of the car was raised sufficiently high to enable the red hot brass bearings and burning lubricating waste from the grease box to be taken out and thrown into a bucket of water. They were then fixed up as usual, and the car lowered into position, to enable us to resume our journey, the conductor muttering to himself as he passed me—"*ten minutes* lost for a hot box!" the unusual scent of which had indicated danger.

Poor man! he little knew what he had to suffer on this trip, as the same operation had to be performed at the end of every twelve miles or so, until, at last, we reached the haven of refuge, Portal, where we had to lie until the old wheels and axle were taken out, and

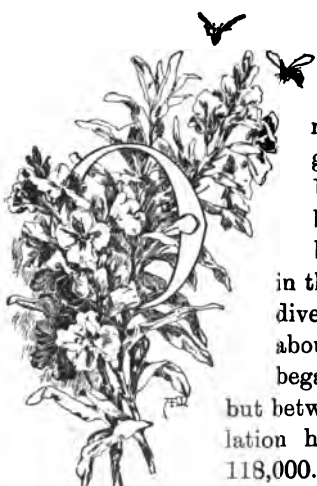
new ones put in. Thus exemplifying in a very practical manner the great value of the interchangeable system in engineering, to which reference has already been made.

Eventually, we got under weigh, fortunately for me, not knowing that my Saratoga had been left behind through not having been opened for examination at the United States frontier. My small gear in the car had been "passed," but as nothing was said about the trunk I concluded that all was well. To my great annoyance, however, I found out what had happened when, after running all day through the rich wheat producing States of North Dakota and Minnesota, we arrived, late at night, and nearly six hours behind time, in Minneapolis.

Next morning I reported this incident to good and kind Mr. Callaway, the C.P.R. representative in that city, who at once telegraphed to Portal for trunk number 999,999 to be forwarded by the next train, which enabled me to get it again the following evening. Had I had little time to catch a homebound steamer at New York or Montreal, I might have lost my passage by this delay, or have otherwise been put to great inconvenience. As it was, however, I stopped two days in Minneapolis for "Chiel" purposes, and thus avoided unhappy consequences. I mention these facts as a warning to those who may be unaware of the peculiarities of some frontier stations, and thus escape the experience just narrated. It may be added that, for convenience, I have given my trunk the number assigned to it at first. In reality, however, it had a fresh one every time it was checked, for obvious reasons.

CHAPTER XX.

A Tour through the United States.—The Twin Cities of Minneapolis and St. Paul — Origin of the Former — Its Industries — General Appearance — Fine Buildings — Tram lines—Mills, etc.—Beautiful Suburban Embellishments—Their Practical Results — Chicago, the Prairie City — Its Streets—Sky-scraping Edifices—Masonic Temple—Strange Request of the United States Government—Pullman Car-building Works—Their Vast Extent and Magnificence—City of Pullman—How the Car was Sprung upon the World — Pullman Works, Interiors — The "Noon Day Rest" in Chicago — A Palatial Avenue — Lifting a City Bodily—Great Fire of Chicago—Vast Hotels—Their Regal Splendour—Departure for Detroit—The City of the Straits—A Retrospect of Mining Life in British Columbia.



IN investigation, I found that Minneapolis, as referred to on last page, is not only the capital of the great north-west of the United States, but also a beautiful city situated on the banks of the Mississippi, and in the midst of a very fertile and diversified plain. It is only about forty-five years old, and began in very small way indeed, but between 1880 and 1890, its population had an increase of nearly 118,000. To-day it is about 300,000. The water power afforded by the St. Anthony's Falls in the adjacent river was the cause of the foundation of the town, and from the mills early

established at these falls were developed the two chief local industries of flour milling, and lumber sawing. For some time past Minneapolis has been the great flour producing centre, and during the last year her mills turned out fully 14,000,000 barrels. The lumber industry, too, has attained gigantic dimensions. Many other good things might be said in a general way concerning this city, and also of its close neighbour, St. Paul, but I prefer to give my own experiences.

A survey of the locality, especially from the top of a lofty tower, gave me a good idea of its nature, and showed me at the same time much that was attractive from a scenic as well as from a commercial point of view. The streets were broad and handsome, and frequently tree-bordered, and the numerous public buildings were more or less beautiful specimens of architecture, according to the purposes for which they were erected. That is to say, for churches, banks, public halls, shops, or sky-scraping temples of commerce, all of which were to be found in great numbers.

As a rule, the last named are usually built more for utility than beauty, but whoever designed those of Minneapolis had evidently an eye for pleasing effect and usefulness combined. One edifice beyond all others of this class which might well serve as a model for many, was the large, lofty, and magnificent stone-built *Guaranty Loan Building*, in one of the offices of which I found my good C. P. R. friend, Mr. W. R. Callaway, who most kindly aided me in learning as much as possible about the city and its surroundings, and for which I now thank him most cordially, also at the same time the city officials who similarly treated me. The building referred to had not only a fine architectural appearance, but possessed most admirable internal arrangements,

which at once attracted my attention. These chiefly consisted of a very spacious quadrangle which extended from the basement to the roof, and around which were placed, on various levels, all the offices of the tenants. The latter were raised or lowered by means of six hydraulic elevators which daily transported from 12,000 to 15,000 people, who, by the aid of handsomely brass-railed platforms encircling the quadrangle or "well," had free access to any desired point.

The beauty of the scene could be taken in at a glance by those who stood at the edge of one of these platforms, thus enabling the whole of the office interiors and quadrangle with its busy crowd to be exposed to view, if desired, from floor to ceiling. When the whole of the space was lighted by electricity, the effect produced was most impressive.

The roof of the building was flat, and formed a lovely flower garden and promenade and entertainment space, from which a splendid panoramic view could be had of the city as well as the surrounding country. A handsome stone baulstrade, with turrets placed at intervals, and a tower for still higher observation, gave a suitable finish to a most useful structure which is the official home by day for 1,500 people. It may be added that edifices of this nature up to about 400 feet in height from street level to roof have only been rendered possible by the invention of the hydraulic lift, which, however, is beginning to be superseded by electric power. One of these buildings recently constructed in New York, of steel girders and columns and faced with stone, has thirty-four stories, and is no less than 424 feet high from basement to roof. The materials used amount to an aggregate of 60,000 tons, and its working staff consists of 4000 people of all ranks.

Sir William Van Horne spoke very truly indeed of this city when he advised me to pay it a visit, as there were so many works of beauty and modern improvements to be seen in it, which I was subsequently very glad to note. It was here, too, that, for the first time during my tour, I had the pleasure of finding the unsightly telegraph wires put underground instead of overhead, which was a great relief. The *tram-car* wires, however, were aloft as usual throughout the Continent. The tram-car system not only very extensively ramified Minneapolis and beautiful St. Paul, but their surrounding districts as well, by means of 240 miles of line. Strange to say, however, I found that the rails instead of being left a little open at the ends to allow for expansion by heat, had actually been welded solid in position for miles together, and did well, although contrary to the usual engineering practice.

Amongst other places I visited were the extensive and admirably arranged electrical power house, and the mills of the Pillsbury, Washburn Co., both of which were situated on the banks of the Mississippi. The latter were not only of colossal size, but by means of the most skilful arrangement of machinery, were automatically enabled to perform almost every operation from commencement to finish, including the delivery of the flour bags and barrels in prodigious quantities into freight cars, with astonishing rapidity, cleanliness, and efficiency combined.

Taken from every point of view, the city of Minneapolis proved a most attractive study, but when it came to the *suburban* districts I was delighted to find that my ideas regarding city embellishments, as given in Chapter IX, were here confirmed in an extraordinary manner. From official information kindly supplied to

me, and from what I could see myself, it can only be said that, leaving London, New York, and Chicago out of consideration, there is no city in the British Isles, nor even on the American Continent, except lovely Boston—"the *Hub*" or centre "*of the Universe*" as it is affectionately termed—which can in any way compare with the extent and number and charmingly varied and lovely parks, parkways, lakes, drives, gardens, etc., to be found in the outskirts of Minneapolis, some of which I had the pleasure of visiting. Amongst these famous spots are the "Laughing Water," or Minnehaha Falls, and fairy glen adjoining them, Lake Como, Lake Harriet, etc., and the adjoining parks, to all of which easy access is to be had by tramcars.

The Board of Park Commissioners, therefore, deserve the greatest credit for the extremely handsome and diversified manner in which these improvements and adornments have been carried out, even on large areas of reclaimed swamp land which were becoming a menace to health.

It may be asked how such a moderate sized town could afford such luxuries? Well, numerous rich and generous citizens have liberally given money or land for such purposes, the rest of the inhabitants having been mildly assessed for the extra sums required. Some may fancy that these city improvements are extravagant and unnecessary; in reality, however, they are not only highly beneficial to the people and attractive to large numbers of visitors, but, as in other places, even in New York, whose Central Park alone cost 20,000,000 dollars, have proved most remunerative undertakings, chiefly owing to the enormously increased value of the land for residential and other purposes which their presence has created. No wonder, then, that Minneapolis has forty-

three parks and public gardens, the total area of which is about 1,600 acres.

Rolling away at last from this beautiful spot, I traversed, for thirteen hours, a moderately hilly, frequently flat and rich agricultural country, until I reached the Prairie city of *Chicago*, or "Che-cau-go," as the Indians had it originally. The history of the city may be thus given in nutshell form.

Like Fort Garry at Winnipeg, Fort Dearborn consisting of two log huts within a palisaded square, was established on the banks of the Chicago River in the year 1803. It was burnt by the Indians in 1812, rebuilt in 1816, and evacuated in 1836. In 1825, however, fourteen cabins formed the nucleus of the great city of the present, the marvellous progress of which has been already described in chapter VII.

On my arrival in Chicago I called on Mr. J. Francis Lee, the highly estimable General Manager of the C. P. R. in that district. Althcugh he had never seen me before, he cheerily cried out to me as I entered his private office, "Come along—I know who you are—sit down—I am delighted to see you."

I soon discovered that he was brimful of enjoyment, even in the midst of his cares, as if he considered it the most distinguished honour possible to have anything to do with such a line, and in such a place. I, too, was vain enough to imagine that even my visit had helped to increase his happiness to some extent. To say that he was all kindness and attention from first to last is so unnecessary, that I only do so to let him know that even now he is not forgotten.

What about Chicago? My dear, good friend, what *can* I say about that ninth wonder of the world which people everywhere do not know already, and yet, some-

thing fresh may be squeezed out of it at a few points. I found that it had a population of fully 2,000,000, and was so immense in area, that once in it, you required some time to get out of it, even by rail, or by swift tram cars, two of which ran me one evening nearly twenty miles into the suburbs at a speed of thirty miles an hour when possible. The country round about is flat and uninteresting, but nevertheless, Chicago is a wonderful city throughout, and of unique interest amongst the great cities of the globe.

The streets were as crowded as those of London, and the shops quite as handsome, but I could not admire such an array of gigantic commercial buildings, hundreds of feet in height, so much alike, so slabby in form, and flat roofed in most cases. Everything seemed to be done for utility alone, with, too often, the merest scrap of architectural adornment. As I was informed that the Masonic Temple was the loftiest of the "sky-scraping" buildings, and as the day was hot, I went up by one of the elevators to a musical performance which was in progress in a large hall on the roof, 302 feet above the street, but on entering it was astonished to find that nearly all the ladies present were *bareheaded*. Turning to a stylish looking and, as I afterwards found, charming American lady who sat next to me, I enquired the cause of this extraordinary spectacle.

"Oh," she replied, "the United States Government has recently passed a law recommending ladies to take off their hats in all places of entertainment as they are such an obstruction to those behind them." This I considered such an excellent arrangement that I could only express the hope that our own Government would do the same, and thus save people, of both sexes, from great visual inconvenience in similar places, and also

from bodily discomfort, which could so easily be avoided.

From the roof of this building, which contains 543 offices, and cost 3,500,000 dollars, I had a splendid view of the city and its adjacent and beautiful Lake Michigan on one side, and on the others an interminable array of lofty edifices capable of aiding to the utmost the requirements of advancing trade and commerce. Upon coming down from this eminence I had a fourteen mile run to Pullman city, at one end of Chicago, to see this wonderful centre of industry connected with the manufacture of the celebrated car which bears its inventor's name.

On arrival at the station of the same name, I found myself opposite the principal entrance to the works, whose splendid frontage was about a mile in length. The entrance building was like a country mansion for architectural beauty, its front being not only adorned by a long tree-bordered boulevard, but also by a small lake and lovely flower gardens. As the total number of men now employed by the firm amounts to about 16,000, of whom 6,400 are engaged in the works before us, the necessity of providing for their home requirements will at once be seen. Mr. Pullman, therefore, aided by his architect and landscape gardener, built for them the town immediately adjoining his vast establishment, in which are to be found in beautiful array and exquisite taste, churches, halls, hotels, and other public edifices, and also the very numerous and admirable dwellings of the workmen and their families.

The origin of the famous car, which is built in enormous quantities at the establishment just named, is interesting as well as instructive. Amongst the "fifties" long lines of railroad were rapidly coming into use in the United States, but as a journey of 400 miles occupied

fully as much time as one of 800 miles to-day, the fatigue of passengers was great. Mr. Pullman, then a young man, had a sixty mile ride by night in one of the "sleeping cars" of the period, but felt so uncomfortable that he lay awake trying to plan some better arrangement.

From 1859 to 1863, the inventor made a series of experiments with the object of developing his ideas. He then rented a workshop, and after many months of hard labour constructed his first car, *Pioneer*, which proved a tremendous leap forward. Its cost was 18,000 dollars, whilst that of the other cars was only 4,000, the high price of the former greatly operating against it at first. So convinced was Mr. Pullman, however, that he was on the right track, that he constructed another and finer car costing 24,000 dollars, which the highly progressive President of the Michigan Central Railway resolved to try upon his own line.

The price of a berth in the old cars was $1·50, and as nothing less than $2 could be asked for the new one, Mr. Joy thought that the extra charge would not be acceptable to travellers. To this Mr. Pullman replied "Put *both* cars on the line, and let the public decide which they will have," and to their delight, passengers so rushed upon the new vehicle and neglected the old ones, that they were at once discarded, and from that time to the present the desire of the public, then so emphatically expressed, has never changed. Thus was inaugurated a new branch of manufacture which has become prodigious throughout the globe, and which originated the establishment now under consideration. When, therefore, we remember that previously the ground on which it stood was simply a morass, it will be seen with what skill and foresight one man

alone has been the means of changing a desert into a garden, and a bleak, inhospitable prairie into a scene of splendour which Aladdin himself might have envied.

Upon entering the works I was introduced to Mr. G. W. Scott, the managing engineer, who, I found, had been trained in various English establishments, and quite remembered me in the Old Country. He at once showed me round in his own happy style, but when I came to see the mighty, highly finished, 2,500 horse power Corliss beam engine which drove a portion of the machinery of the works, and some of the 20 smaller engines, amounting in all to about 10,000 horse power; when I beheld the multitudinous machines in the shops, and the various processes required for the building of cars on a gigantic scale; the immense quantities of timber, and iron, and steel to be used in their construction, and indeed everything that Mr. Scott was pleased to show me, I was greatly impressed with the splendid system of manufacture here carried out, even to the most minute particulars, which has made the Pullman cars of to-day what they have now become.

To describe properly in detail these manufactures: the brickyards of the Company which turn out 3,000,000 bricks a year; the storehouses of every kind; the parks, and lakes, and gardens, in fact Pullman City as a whole, would require a handsome volume. What has been said, however, is perhaps sufficient for the purpose.

Whilst meandering along the streets of Chicago one afternoon, I came upon a building entitled "*The Noon Day Rest*," and so, although 1 p.m., I entered it to have a look at the premises. I was met by Mrs. Johnstone, the lady-in-chief for the day, who most kindly interested herself in my visit, and invited me to lunch, introduced me to two of her relatives who had

just come from the Southern States, and made me feel quite at home amongst them all.

She then informed me that the Institute was originated as a means of providing, at very low rates, meals, classes for languages, art, &c., and other privileges for ladies who might desire them. The Membership fee was 25 cents a month, and so popular was the enterprise from the first that 600 members joined it at the outset in 1894. At meal hours the dining hall is quite full. Everything on the menu is priced five cents, and as there are no waitresses, every lady has to act in this capacity for herself, and does it well too, pretty paper napkins being supplied free of charge.

"The Rest" consists of a suite of eleven attractively furnished and decorated rooms, including a reception hall, office, library, music room, lunch room, &c. The library not only contains a large number of choice volumes, but the current magazines, daily papers, and so on, in addition. The institution is under the guidance of the usual "Board of Directors" and other officers, all ladies, whose labours are honorary. When the people of that splendid Rest come to read these lines I hope they will think that I have at least tried to do them fair though brief justice. At any rate it will show them that I do not forget the delightful hour I had the honour of spending in their company. May all happiness and prosperity be theirs.

Cities Britannic are frequently so irregular in ground plan, and have sometimes so many streets radiating from one centre, as greatly to confuse strangers. In the United States all this is avoided by the simple process of having a number of straight and parallel "avenues" running lengthwise, which are right-angularly crossed at stated distances by "streets," thus forming "blocks,"

the known number of which gives a fair idea of the distance to be traversed before reaching a certain point. These intersecting streets, instead of being named, are numbered, say, "Tenth Street East" of a main centre avenue, or 120th Street West of the same. By this means, the position of a locality may be ascertained at once and proceeded to without any more trouble, the only disadvantage, however, is the severe monotony of *straight* lines, perhaps up to about 30 miles in length, as in New York, and 25 miles as in Chicago.

Although the central business thoroughfares of the latter are lined by strictly utilitarian edifices, those in the residential parts are handsome, and extremely varied, the private residences being principally detached villas. One of the finest of these districts is *Prairie Avenue*, a street of millionaires possessing from 1,000,000 to 30,000,000 dollars each, and other rich people whose mansions are costly and superb works of art and beauty. Here are to be found the homes of Mr. Pullman, Mr. Field, Mr. Pike, and others; indeed, it may be said that without the substantial aid rendered by a few in this Avenue alone, the World's Columbian Exposition could not have existed.

Some time after Chicago began to flourish, it was found that, being so little above the level of Lake Michigan, the drains would not act properly. The city authorities, therefore, conceived the happy idea of lifting the houses bodily and raising the streets, which was accordingly done satisfactorily, and which accounts for the present level of the city. A remarkable example of this process is furnished not only by the lifting but by the transportation of a magnificent hotel, 465 feet long, 150 feet broad, and weighing 5,000 tons, at Coney Island, near New York. The cause of this was the construction

of *protecting* sea walls on the adjacent property, which had thus unexpectedly produced an amount of scouring power sufficient to carry away the beach in front of the hotel, and thus allow the sea to encroach to such a dangerous extent upon the building as to necessitate its removal to a point 239 feet inland.

The most awful calamity which ever befel Chicago was the Great Fire of 7th October, 1871, which, aided by the very dry state of the weather and a strong wind, devastated an immense portion of the city. Some idea of the extent of this may be gathered from the fact that about 100,000 persons were made homeless in one night, nearly 300 were burned alive, and, according to the account of the statisticians, property to the amount of £40,000,000 was destroyed. The loss to the Insurance Companies was so great that fifty-seven of them at once suspended payment.

At one time, the *Grand Pacific Hotel* was considered the largest and finest in the United States, if not in the world, owing to its regal magnifience and colossal proportions, covering as it did an acre and a half of ground, with 1,000 lineal feet of frontage, and containing 600 rooms, many suites of which were furnished and decorated to represent the styles of various nations.

George Augustus Sala tells us that he stopped here on his first outward trip to San Francisco, but when he beheld the gorgeous array of its attendants, and their apparently high and mighty demeanour, and saw them ablaze with diamond shirt studs and pins and rings, etc., he felt that there was no more spirit in him, and was afraid to speak to such sublime beings. When, at last, however, he ventured to say something, he found them all kindness and attention, and, indeed, ready to anticipate every want. He fully reported these gentlemen

and their surroundings in one of his letters to the *London Daily Telegraph*, and then left for the West.

Calling at the same hotel on his return, he was surprised to find the staff, coloured and otherwise, lining the vestibule, etc., as a guard of honour, and bowing, smiling, and grinning delightedly as he ascended the marble staircase between them all, the reason being that they had, during his absence, *read his remarks about them!*

Strange to say, the Grand Pacific, of 110 feet in height, which I visited and noted, has been curtailed in area owing to the enormous advance in the value of the land on which it is built. To talk appreciatively to-day of this hotel, or, indeed, of any other I suppose on the globe, to an American, is almost sure to provoke the reply—"See the *Waldorf of New York*, and live!"

"What about the slums of the Prairie City?" Well, I did not see any, although I believe they were to be found. Geographical and historical and social researches concerning these localities, thrillingly written, profusely illustrated, and bound in cloth, at 10/6 *net* a volume, I leave entirely to those who delight in writing and reading such narratives. Some day, therefore, we may be favoured with a volume bearing the title—*Has you seen Her? or The Phantom Bride of Chicago.*

And now, having sketched in mere outline a few of the leading features of this locality, it only remains to be said that when the time arrived for my departure, I wheeled off at 11·15 p.m. in an easterly direction, on what proved to be a nine hours run by rail to *Detroit*—the City of the Straits—which, with the immediately opposite Canadian shore, were ever sacred in the memory of "Uncle Tom." As so much, however, has already been given of a descriptive nature in this chapter,

the remarks on our new halting place must be very brief.

I arrived on a day of sunshine and splendour—as usual for months past—and found the city looking lovely On the right hand was Lake Erie, and on the left was Lake Huron, the beautiful Straits lying between them, the southern extremity of Ontario coming down to meet us in the most irregular manner. The streets of Detroit, and the architecture of their commercial and other buildings were most admirable. Its suburban attractions of a very marked nature. Its elegantly designed waterworks main pumping engines building, with its pinnacled towers, and garden park and lake, were things of beauty. Its straits, a lovely sheet of water, and above all may be mentioned the charming *Belle Isle Park*—the pride of Detroit—with its boulevard shore drive of nine miles in length.

This island was exquisitely laid out at every point, and besides this, had a deer park and fairy lake, and main internal waterway for boating—a bear enclosure—a handsome refreshment building—a rustic police station—lovely flower gardens—beautiful walks and drives, fine bridge to the mainland, and other objects which were most pleasant to behold.

It was "*Children's Day*" all around for many miles, and, 'pon my wor-r-d! they *had a day of it* in thousands on Belle Isle. I went amongst them, and entered a wagonette for a boulevard drive with a full cargo of young folk chiefly in white and cream coloured dresses, looking extremely smart, and also others who had once been quite as youthful.

Oh, my! we had a rare good, merry, joyous, festival season to ourselves aboard the car. I distributed some fruit amongst them, made friends with every one of

them, and learnt all their names, too, as we drove along so happily amidst those scenes of beauty. Thus, and in other charming ways, after meandering through Detroit city and suburbs for the whole of a long day, in "Chiel" as well as in "Happy Traveller" fashion, I ended my visit.

The day was done, the night came on, and about 11 p.m. I was on my course heading for Toronto, the next point of call, our trunks having in the meantime been "passed" before crossing the frontier. The train was now divided into three parts and carried bodily over on a large ferry boat, as at Kalama, near Portland, Oregon, until we reached *Windsor* on the Canadian shore. Here it was again united, and off we went in a north-easterly direction for—commercially speaking—the second city of the Dominion, to which reference will be made "in our next."

Before entering upon a final description of Eastern territory it may be well to take a socially retrospective view of the Kootenay mining district of British Columbia to which attention is now being increasingly paid. From the publications of various authors one would imagine that the miners in the Far West were the greatest villains in existence. Vicious, reckless, drunken profligates in most cases, and all of them, including the ladies—sweet creatures?—associated with them, carrying pistols in their belts, and ready to maim for life or to kill for pleasure, or to murder for amusement anyone who gave them, even unintentionally, the slightest provocation. Such, indeed, must have been the impressions of those who have read these writings, which, we may assume, were intended more for dramatic effect than for truthfulness.

Now, what a pleasure it is for me to say that, having

spent five days and nights in the midst of the Far West mining regions, high up in the mountains, and isolated from the world, I found nothing of this. At night I saw the miners of Rossland, Nelson, and Sandon, British Columbia, perambulating the streets in the most orderly manner. Not one of them playfully fired a shot through the crown of my hat, or tenderly pricked me with the point of a bowie knife, nor did even one single lady amiably point her revolver towards me to see how I liked it. Nothing of the kind happened, nor was anything impertinent said to me as I walked amongst them in Chiel fashion.

More than this, they were all unarmed lovers of peace and quietness, and treated me more like nature's gentlemen than anything else. For the favours thus bestowed upon me, and for what I saw of them as a whole, I can only thank them most sincerely, and all the more so on account of the prejudice which I once had against their class.

It has been stated that the great festival day amongst miners is Sunday—a day wholly given up to rowdyism and debauchery—a brisk and brilliant day for the drinking saloon fraternity—a day, too, which usually leaves on some a mark for life of deadly feud for the merest trifles, or even for mere gratuitous devilry. Instead of this I found General Booth's ever active friends—the Salvation Army people—holding meetings opposite the Hotel Allan and in other places during the Scotch village-like Sunday I was there, and drawing large and most attentive audiences. When, therefore, I left Rossland next day, I did so with kindest remembrances of all I met in that City of the Clouds.

In Nelson, the same admirable conduct prevailed all round. On the last night of my visit to this charming

spot I went to a simple little week-night service in one of the churches of the town, which was well attended, and to which I was heartily welcomed, and had the honour of making a few remarks It certainly was a bright and happy assemblage which might indeed have given a few lessons to the clergy of many of our churches at home, in what real ecclesiastical life could do for the people. My knowledge of these most worthy citizens was thus only of an hour's duration, but it was nevertheless so intensified that even now the least I can say is, God be with you, dear friends, till we meet again. It may be added that during my visit I stopped at the Hotel Hume, in which I had the best treatment, and also the benefit of a lovely view of the Kootenay Lake and neighbouring mountains.

Of Sandon, another very isolated mining locality, I can also speak in similar terms regarding the conduct of the people, whom I noted as I walked up and down its streets for a time, and saw them standing in knots at various points. In the course of the evening I heard music in some building on the side of the immediately adjacent mountain, and so, after climbing about 100 steps, I found myself at the door of a church where the choir were practising for the following Sunday. Here, too, I was received most kindly. One thing which struck me forcibly was the fact that, aided by an excellent conductor, the music they performed was characterised by great freshness of style. No doubt, however, its beauty was enhanced by the acoustic properties of the timber building in which we were assembled.

So far as "*Klondike*" is concerned I have but little to say, as I did not visit that region. When at Victoria, however, which was a stopping and starting place for

the miners, I was informed that a fair quantity of gold was only to be found by the possessors of a *good* claim, but that not one in one hundred succeeded in obtaining this. As these people, however, had been *unsuccessful* their minds may possibly have been prejudiced.

Few of the great events of the nineteenth century have more profoundly moved the English speaking races in so short a time as the discovery of gold in this part of the country. In spite of the geographical and other obstacles which here abounded, a rush was made upon it by immense bodies of people—many of whom were utterly unfit for the work—whose object was to obtain gold by means of the very cheap gravel, &c., *washing process*, which differs materially from the expensive systems practised in many other localities.

Mining operations are frequently disappointing in new territory, as they are chiefly of an experimental nature at the first, time being required to ascertain the true value of the property. So, too, no doubt, has it been at Klondike, but in this case we have not sufficient trustworthy data upon which to base further remarks beyond merely stating that, according to the latest information, the district has steadily progressed.

CHAPTER XXI.

THE EASTERN PROVINCES AGAIN. — Crossing into Canada at Detroit—Toronto and its Surroundings — Niagara Falls — Their Curious Origin — How the "Great Gorge" was Formed — Opinions of Scientists — Varied Retrocession of the Falls — The New Railway Bridge — Peculiarities of the Falls and River — Means of Access — Disasters Past and Present — Electrically-driven Works — Lady who "*Owned the Falls*" — How their Attractions were Developed — Hamilton—Its Prosperity—The Thousand Isles—How to See Them—Montreal Again—Mrs. Birt's Distributing Home for Boys and Girls at Knowlton, P.Q.—Its Great Success—The Maritime Provinces—Nova Scotia—New Brunswick—Prince Edward Island—Newfoundland.

SHORTLY after our train was coupled together, as mentioned in the last chapter, we started in fine style into the heart of fresh territory. To one accustomed, like myself, to hear so many *Indian* names of stations throughout the country, the change which now occurred would no doubt

have been surprising, without previous knowledge of what was coming in the form of an array of names Britannic. These had no doubt been given as a compliment to the innumerable Scotch, &c., farmers of Southern Ontario, which we were now traversing.

So much, indeed, was this the case that we might well excuse an old lady in one of the sleeping cars, who, on being awakened from time to time, and forgetting where she was, told a friend that she "had heard a deal aboot the wunners o' electreecity, but ne'er ken't it could whusk ye aboot frae Melrose to Lonnon, frae Lonnon to Edinburry, and then bang awa' to Ayr in the clap of a hand afore breakfast!"

I myself thought of the Old Country with these and other reminders so frequently before us as we rolled along. In due time we reached Toronto, when I immediately went to the Queen's Hotel and had breakfast, and as my main object was to study carefully the peculiarities of the city and neighbourhood, I started as soon as possible to spy out the land.

Toronto—or in Indian, "The Meeting Place"—is one of the most progressive cities of the Empire, and is situated near the foot of Lake Ontario, about 40 miles from Niagara, and about the same distance from Hamilton. Toronto—the "Queen City," a "City of Homes" as it is affectionately termed, and of about 250,000 inhabitants—is a lovely spot, having a long frontage to the lake. It is a city of business, and learning, and universities, colleges, and all sorts of Institutions of a highly intellectual class, and, above all, it is the seat of the Ontario Government.

Its streets are broad and well bordered with trees, the buildings which line them, as well as those of a public nature being very diversified and handsomely designed,

its parks and gardens being also objects of great beauty. The ground plan of the town is very regular and easy to traverse, indeed, I found Toronto, as a whole, a splendid field for observation, which, coming to the knowledge of the editor of the *Mail and Empire*, induced him to favour me with an amusing and instructive article entitled "A Chiel amongst us." I happened to see one sky scraping edifice amongst others, which might well set an example to many in the art of similar design. This was The Temple Building, the architecture of which had a very handsome effect.

Upon visiting Parliament Buildings I was received most cordially by all whom I came to know, and especially by the Hon. Mr. Blue, the Minister of Mines, who, not only in his particular branch of study, but in others also, kindly enabled me to be supplied with stores of knowledge concerning his Province, and showed me over his handsome domain.

The Exhibition was in full swing and drawing large crowds, but it did not attract my attention so much as I expected, the reason being that the glories of the Winnipeg Fair had diminished my appreciation of all others of a similar nature.

When in Montreal I came in for one National holiday—"Dominion Day;" now, however, I experienced another in the form of "Labour Day." With this in view, I went off by an early steamer, so that I could have a good time at the Nee-áh-gá-rah—Iroquois Indian—or *Niagara* Falls as we call them, easy access to which can be had by rail, or by steamer across the lake to Lewiston or Queenston at the head of the navigation, the former being on the American, and the latter on the Canadian side of the river.

So much has been said and written about this won-

derful region by famous men and women, and beautifully illustrated by artists of the highest order, that it seems quite unnecessary to make any further remarks, and yet I must try to say something in original style. It may be added that, having studied the expressed opinions of several eminent men, including Sir Charles Lyell, the famous geologist, Professor W. M. Davis, of Harvard University, T. B. Comstock, of the University of Illinois, R. S. Woodward, and G. K. Gilbert, of Washington, and others, there is, naturally, some substantial foundation for what follows.

Firstly, then, the reader may perhaps be surprised to hear that, within the range of modern times in the history of the earth, there were no Niagara Falls until after the subsidence bodily of Lake Ontario. As the level of the other great Lakes is practically the same, Huron and Michigan being on a level, Superior only 20 feet above them, and Erie eight feet below them, and as the surface of Ontario is as much as 326 feet below the level of Lake Erie, 30 miles distant, we have at once a fair reason for the present height of the Cataract, in addition to the ordinary declivity of the river from lake to lake. Probably volcanic agency caused Ontario and part of the adjacent country to sink and fill up a cavity which may have at one time existed beneath them. Hence we find good cause for the origin of the famous Falls, which, according to Professor Davis, were formed at Lewiston, seven miles below their present position.

The *Great Gorge*, therefore, seems to have been simply cut out by the erosive action of the water, which Professor Gilbert thinks has required 7,000 years to accomplish, whereas Dr. Pohlman, of Buffalo, considers 3,000 quite enough for such a performance.

The rate of retrocession has been variously given from one foot per annum by Sir Charles Lyell, whose local experience was only limited, up to as much as 6 feet 2 in. in the same time during the 33 years previous to 1875, and, similarly, 16 feet 6 in. per annum from 1875 to 1883. The last two statements, however, are given on the authority of Mr. Thomas Evershed, a talented and well known civil engineer who made surveys of the Falls for the New York State Surveyor. One of the most trustworthy authorities, however, on this subject, has been Professor James Hall, who in 1842 made a careful trigonometrical survey of the district for the New York State Geological Survey Department, and who was of opinion that after a furthur recession of about two miles, the Falls will encounter a very hard and thick stratum which may permanently resist erosion, their height by that time being reduced to about 80 feet.

The statements of these scientists may naturally appear to disagree, unless the varying nature of the strata through which the great gorge has been cut by the action of the water is taken into account. For this reason, we may assume that they are all more or less correct, although pointing to a period which is to be deplored. One reassuring fact, however, is certain, which is, that, taken as they now are, these magnificent Falls will last—*our* time. Ocular proof of the above remarks may be partially gathered from the first known engraving of a bird's eye view of the Falls and river towards Lake Erie, as they appeared in 1697. This shows clearly enough that great changes have since occurred, and that Goat Island, 200 years ago, must have been very much longer than it is now.

The view on next page gives a good idea of this

THE GREAT GORGE OF THE NIAGARA RIVER.

wonderful region as it at present exists, and is taken from a large and exquisitely beautiful steel engraving recently issued by the Grand Trunk Railway Company. Here we have clearly shown the upper portion of the Gorge referred to, with the tram lines and cars from Lewiston in full view, and ascending the incline to Niagara City, the mere outskirts of which are visible.

The bridge is a newly-built steel one, which, owing to the enormously increased traffic of late years, has superseded the old suspension structure of 1855. The arch is 550 feet span, and is supplemented by straight spans of 115 feet in length at each end. These, with the approaches, make up a total length of fully 1,100 feet. The level of the railway lines is 252 feet above the water, and below these may be seen another level for tramways, a central carriage way, and on each side of the bridge a roadway for pedestrians, the present bridge being capable of carrying six times as much load as the old one.

Like everything else in the picture, the river is true to life, and well shows its smooth oily surface full of eddies and currents nearly up to the Falls, whilst some distance beneath it are fiercely disturbed ones, which come to the surface lower down, as shown, and form the beginning of increasingly turbulent rapids. The depth of the river is said to be about 200 feet, although only 20 feet deep at the crest of the Horse Shoe Falls, the height of which is 165 feet, the total breadth of the cataract being about three quarters of a mile.

Amongst the millions who have visited this spot have been people whose frightful accidents or tragic end may have often thrilled the readers of the popular day-by-day history of the Falls, to only a few of which reference can be made.

The first of the series appears to have been the

burning of the steamer *Caroline*, in 1837, which, while in a blaze from stem to stern, passed down the upper rapids to her awful and final plunge. After this came a long list of disasters of various kinds. Indians in their canoes, and people in boats have frequently made the same plunge. Others through carelessness, or foolhardiness, have fallen into the rapids and been lost, and yet the first little steamer, *Maid of the Mist*, was navigated in safety through the wild and dangerous whirlpool below the bridge just described.

Blondin and others have frequently crossed on the tight rope, or tight wire, near the same spot, one of whom fell off and was killed. Captain Webb tried to swim across the same place, and thus finished *his* career. The wildest possible performances have often been played off before immense crowds of people. A stage coach, too, which had been taken close to the verge of the very overhanging and massive Table Rock, fell with it into the surging flood. Accidents, or suicides, have occurred at nearly every accessible point of danger, some of the latter, indeed, have been so magnetised to the spot that they have come long distances to end their existence in this manner. Lunatics and unfortunate women have leaped from the bridges. Bridal couples, also, have come in thousands and — gone away in peace. And now there are hardly any novelties to introduce, unless, perhaps, the crossing on the tight rope by a young lady on a bicycle, which, I hope, will ever remain more in fancy than in reality, as I cannot approve of any one of the sex which has been dear to me through life thus risking her existence.

One of the most important works in the world has been the construction of the Niagara Electrical Power House previously referred to, and near which is to be

found the admirable establishment of the Carborundum Company, which produces immense quantities of a special and most effective kind of wheel for metal, &c., grinding, cutting, and abrasive purposes. These works, as well as very many others far and near, are driven by electrical power supplied by the former, all of which foreshadow the successful application of this system on the most gigantic scale.

So far as the viewing points of the Falls and river are concerned, neither Americans nor Canadians have neglected anything that could in any way enhance their attractions, which require to be gazed at and studied some time before their enchanting loveliness by sunlight or by moonlight can be fully appreciated. Millions have done this already, and countless multitudes yet to come will do the same to their great delight.

Many years ago, Miss Jane Porter, a rich American lady, whilst travelling in Europe, was asked if she "had ever seen the Falls of Niagara?"

"*Seen* them!" she replied, "I OWN THEM!!" which was quite true, as the United States portion of the Cataract had belonged to her father and was then hers, both of whom had found them an increasingly valuable estate.

In addition to the beauties of Niagara already mentioned, reference must be made to the scenery *above* the Falls, which differs very materially from that below them. This soon becomes apparent as we traverse the various islands and note their points of interest until we reach their utmost verge. Standing now upon a mere isolated rock swept by the current we have immediately in front of us the splendid spectacle of a seething, turbulent, foam-crested world of waters hastening onwards to the verge of the precipice we have previously

been gazing at from below. To some, indeed, this scene, with its surroundings, is one of the most attractive in the whole region, and well may it be so.

It may be interesting to know how this locality became what it is to-day from a landscape garden point of view. Not until 1836, when a railway was connected with the Falls, did they become a source of real profit from visitors. Large hotels were built to meet the demands of increased travel. The American side of the river developed more rapidly that the Canadian, because it was the dream of "practical men" to build at the Cataract a new Manchester for vast manufacturing establishments. The financial disasters of 1857, and the great war between the Northern and Southern States greatly reduced the number of visitors. Cheap buildings, mills, and factories were erected along the bank of the river, which marred its beauty. An irritating system of fees, and tolls, and petty extortions, amounting in all to five dollars for the whole of the sights, did so much to injure the district and keep people from coming to it, that Niagara's temporary degradation hastened the day of her emancipation.

In 1878, Lord Dufferin, the then Governor General of Canada, had a conversation with Governor Lucius Robinson, of the State of New York, regarding the fallen estate of Niagara, and from this incident sprang a series of movements which in the end produced the happiest results. The slow machinery of legislation, combined with determined opposition from various sources, greatly delayed the work. A park of 115 acres costing 1,433,430 dollars was eventually purchased from private owners, and then beautifully laid out. Thus it came to pass that the "New York State Park" was, on July 15th, 1885, the scene of a very memorable ceremony which

was performed in the presence of 60,000 people, who witnessed with great rejoicing the declaration of the Falls and Park free to the whole world for all time.

In this manner it happened that, for surrounding places of great interest and beauty, and steamboat and carriage fares and bridge tolls of very moderate cost, the Falls are what they are to-day—a scene of ever increasing attraction to visitors from all parts of the globe. It may be added that, although the honour of originating the scheme just mentioned belongs to Canada through her Governor General, New York won the credit of being the first to take action in the matter. Besides this, it may be stated that a reservation of 120 acres on the Canadian side of the river was opened on June 21st, 1887, under the title of the "Niagara Falls Park," which is also a charming resort from every point of view.

And now, let us have a peep at lovely Hamilton, a city, too, which is remarkable for the extent and variety of its manufacturing industries. By the accidental missing of a train for New York some years ago, a party of English gentlemen who had been on a tour through Canada and the United States were induced to take the run from Niagara to Hamilton to spend the time whilst awaiting the departure of the next east-bound train. So much impressed were they with the city, its position, its beauty and resources, that what was intended to be a visit of a few hours only, became one of several weeks. Subsequently they wrote to the secretary of the Hamilton Board of Trade informing him of the circumstances just recorded, and added:—

"Of all the places we visited during our trip on the American Continent, the prettiest, cleanest, healthiest, and best conducted was the city of Hamilton, and from

the inspection of its vast and varied manufacturing industries, its 170 factories, the large capital invested, and the immense out-put annually, we concluded that it was well named the "Birmingham of Canada," and had undoubtedly a great and glorious future before it."

To the same city official, and also to the mayor, I am much indebted for full information regarding this lovely locality, which, though not very long ago a howling wilderness, has now a population of about 60,000. Hence it has become what it is to-day—a city of trees, and handsome streets, and elegant public and private edifices of all kinds, and parks, and gardens, etc., embellished in the main by a "mountain" on one side, and on others by the beautiful waters of Ontario, the forest which once covered its site having been removed.

As previously mentioned, Toronto is a central point of departure for many places of great interest, none of which, however, can be more picturesque than *The Thousand Isles* of the St. Lawrence, which are shown to a very limited extent on page 91. These are distinctly visible to passengers by the splendid steamers of the Richelieu and Ontario Navigation Company, which run from Niagara, Hamilton, Toronto, and many intermediate places, to Montreal and Quebec, and finally to the Saguenay, a total distance of fully 800 miles. It may here be remarked, however, that what helps to make the scenery of Canada so lovely is the almost perpetual sunshine, and the wonderfully clear air which prevails throughout the land and gives a charm to everything, as I had so many opportunities of noting.

There are other steamers which traverse some of the channels around these 1,700 isles and islets, but perhaps the most enchanting way of visiting them is by the steam yacht *Captain Visger*, illustrated on page 93,

or to explore the same region in sailing or rowing boats. Here, however, may I be allowed to inform those who do not know the intricacies of the navigation, and to remind those who may have forgotten them, that unless they note their bearings very carefully, they may soon find themselves in a maze as well as in *amazement* at the result of their excursions.

Before leaving this wonderful region it may be well to state that the Canadian lakes, as well as other large tideless bodies of water in other parts of the globe, have had their local level considerably elevated or depressed by the continued action of violent winds blowing either from or towards the land. Amongst other places, it may be mentioned that, in this respect, Lake Michigan has been known to alter its shore level considerably, and that from the same cause, Lake Erie has actually had its surface level influenced as much as fifteen feet of vertical height.

After a stay of nearly a week in Toronto and district, I started one evening at 10.30 for a 338 miles run to Montreal, at which I arrived early next morning with the object of making a few final visits before starting homewards. By the kind invitation of my good friend and neighbour in Liverpool—Mrs. Birt—I went to see her "Distributing Home," at Knowlton, Province of Quebec, and seventy miles distant, where I found everything in admirable order.

Fully twenty-seven years ago this excellent lady was the means of organising, by the kind aid of others, a "Sheltering Home" for orphans, and also for fatherless and motherless boys and girls who, in the first place, have a year's training for useful Canadian work, the most suitable of them being periodically selected for farm life in the Dominion. These, Mrs. Birt takes charge of

during the voyage to Montreal, *en route* for Knowlton, where paying situations are always awaiting them. This system, we may add, has produced the best results by providing employment, and homes, and happy surroundings for those who otherwise could not have obtained them. On the return trip to Montreal I was favoured with the company of Mrs. Foster, the wife of Judge S. Willard Foster, and also the Hon. Sydney Fisher, both of whom were delightful companions—the latter proving most instructive on things Canadian.

And now we come to the *Maritime Provinces* which have not yet been described. Since, however, a good deal has been narrated in the preceding pages about Canada as a whole, and also in detail, which, in the main, are applicable to its eastern territory, it will not be necessary to say much concerning *Nova Scotia*, *New Brunswick*, and *Prince Edward Island*, to which the first italicised term refers. To avoid wearying the reader, however, with unnecessary descriptions, it may be briefly stated that while these provinces are devoid of any special natural features, they are, nevertheless, in their own way, extremely beautiful and diversified throughout, and more or less fertile according to circumstances, and also that in various ways they are the seat of very much profitable industry.

The province of *Nova Scotia*—or New Scotland, the home at one time of "Evangeline," and the scene of her touching story—as the most eastern of all, deserves primary consideration. It is connected with New Brunswick by an isthmus 14 miles in width, and is about 300 miles in length, and 80 to 100 in breadth. Its capital is Halifax, the population of which is about 45,000. Not only is the city beautifully located on rising ground bordering the lovely harbour, which is said to be "the

finest in the world "— after Sydney, Australia, of course—but it is the main winter port for British mail steamers, and a strongly fortified naval and military station as well, its commerce with the world being of a very comprehensive nature.

Its distance from Montreal by the C. P. R. is 756 miles, and by the Intercolonial Railway, which makes a long sweep around Quebec and New Brunswick provinces, as much as 837 miles. So far as the Bay of Fundy, which washes the western side of Nova Scotia, is concerned, its formation is of such a nature that the incoming tide rushes along like a great wave, or as a vast surging river which frequently rises to the height of 70 feet.

No part of Canada offers to the settler better prospects of rising by his own industry to a properous condition in life than *New Brunswick*. It was not until the construction of the Intercolonial Railway in recent years—thus connecting N. B. with the western provinces—that its valuable resources became properly understood; they are so now, however. It may also be said that the climate is one of the best, that agriculture flourishes generally, and that fruits of every kind grow to perfection.

Its main city of St. John is not only a lovely spot, and the terminus of the Canadian Pacific and Intercolonial railways, but it is, from various causes, a very popular eastern port all the year round, and especially is it valued as the best winter harbour of Canada, as ship captains of long experience have reason to know. Further than this, the harbour has never been frozen during its whole history. A strange natural peculiarity of one part of it is the fact that it possesses a fall of water which, according to the state of the tide, will

run backwards or forwards, sometimes with great turbulence. The distance of St. John from Montreal, which is the point of departure for all the maritime provinces, is 481 miles direct by the C. P. R., and by the roundabout route of the Intercolonial Railway, as previously explained, 740 miles. This same line, too, branches off at Moncton for a long run to Sydney, Cape Breton Island.

Prince Edward Island is the smallest of the Provinces of the Dominion, its area being only 2,000 square miles. It is situated in the southern part of the Gulf of St. Lawrence, and is separated from Nova Scotia and New Brunswick by the Northumberland Straits, which are from nine to thirty miles in width.

Its scenery, though of a practically level and occasionally undulating description is, nevertheless, very prepossessing, and presents a charming picture of cultivation and well wooded land, with villages and cleared farms dotted along the shores and by the sides of the bays and rivers. On the whole, the island has quite an English aspect, with its hedgerows instead of wooden fences, and flourishing homesteads thickly scattered in every part of the province. Its capital is Charlotte Town, the seat of Government, the population being about 12,000. Finally, whilst the I. C. R. carries people as far as it can on the mainland and throughout the island, comfortable steamers perform the Straits portion of the journey.

So far as *Newfoundland* is concerned, it may be said that it possesses an independent Government of its own, and is therefore *not* a Canadian province. It is a beautiful and mountainous island, as we had full opportunities of noting on board the *Dominion* on a lovely day, during a run of 270 miles from Cape Race, the first land

sighted, to Cape Ray. The splendour of the scene was enhanced by the presence of a few icebergs of great beauty, though also at times of great danger, hence the frequent use in such parts of the masthead flag signal from many ships—"Have you seen any ice?"—which is a safe precaution.

Besides the Provinces already described throughout this volume may be mentioned the Provisional Districts of *Assiniboia*, of about 89,500 square miles in area; *Keewatin*, of 282,000; *Saskatchewan*, 107,000; *Alberta*, 106,100; and *Athabasca*, of 104,500 square miles. We have also the *North-west Territories*, of 906,000; Territory of *Hudson's Bay*, 358,000; *Islands in the Arctic Ocean and Hudson's Bay*, 300,000 square miles. In addition to these may be taken into account various smaller territories, including the great lakes which, in the aggregate, make the total area of Canada 3,456,383 square miles.

For the sake of contrast it may be stated that the similar area of Great Britain, including the Channel Islands and Isle of Man, is 89,300 square miles; that of Ireland being 31,874. With these facts in view, and with the detailed distances already given, it will no doubt be clearly apparent that the title of this volume is fairly accurate.

CHAPTER XXII.

CONCLUDING REMARKS.—Hints for Ladies—The Employment Problem of To-day—How a New Law affects it—Ladies as they Were and as they Are—Women's Official Occupations and their Effects on the Men—A Curious Incident and its Results—British and Canadian Employment Prospects of the Present compared—Mrs Birt's Authoritative Statements regarding the Latter—New Lines of Thought for Everyone—The Author's Professional Experiences—Commencing Private Practice—Apparently Overwhelming Obstacles—Success at last—A Time of Difficulty again—How it was weathered—His Initial Movements in Canada—Results—Popular Errors—Latest Facts from the Far West—Last day in the Dominion—Vice-Regal Reception at Quebec—At Sea—Home again—Arms of the Dominion and the Provinces explained.

AND now, having run the length of my tether so far as Canada as a country is concerned, and having already given, we hope, good advice to men folk, let me try to do the same for the women, or the *ladies*, which ever you please.

The *employment problem* has in the British Isles, for some time past, been a very perplexing and harassing one, owing to the unwelcome innovations of recent years, to which reference has already been made. There is still another unhappy phase which must not be passed over. In the good old days, if a man met with an

accident through his own negligence, he himself had, naturally, to bear all his own costs. On the other hand, if he were injured through the faulty premises, &c., of his employer, then the latter had to give full compensation, which was only reasonable.

The recent passing of the Employers' Liability Act, however, has so altered this as to render a master fully liable for a workman's or a workwoman's accident, no matter from what cause. Firms and Companies, therefore, to protect themselves from what might be very serious loss have instituted a new order of things by, in many cases, not allowing their hands to be kept on beyond the age of forty, nor to be engaged above the age of thirty. The disastrous effects of this will be at once apparent when it is known that previously men could, if they pleased, remain at their posts honoured and respected as "old hands" to the end of their days, in spite of dull periods. This beautiful phase of workshop life seems, however, to have disappeared, the consequences being what one may well imagine.

Now, how about the opposite sex? Well, before anything can be said on this subject let us retrace our steps a little. Up to about twenty-five years ago a great amount of reserve existed in the minds of ladies regarding the ordinary affairs of life with which men were in any way concerned. To ride on the top of an omnibus, or even on a bicycle, would have been considered something dreadful. To sit in the same class rooms with young men at universities and colleges, and to hang their hats and cloaks in the same ante-room or hall with them, would not for a moment have been tolerated. And if a lady had been known to act as a typewriter or clerk to the principal of a mercantile or any other firm in his private room, or with the clerks in the

general office, it would have seriously damaged her reputation. To some extent there was an excuse for this, as the fair sex had yet to learn, in a public capacity, how much we deserved their confidence, and also how grievously our character had been misunderstood, an excellent example of the latter of which, in a large community, I painfully remember.

In *these* days, ladies not only gladly perform all the little movements referred to without any unkind criticisms of their conduct, but have actually invaded our offices, and, indeed, all our public institutions, to such an extent as to seriously injure the prospects of the men whom they have so greatly superseded.

For this, as a rule, the former cannot be blamed, as many of them require profitable employment quite as much as the others. The mischief, however, in the main, is really done by those who are well provided for, but who, having no relish for the home occupations which they should gracefully adorn, long for office work and the extra *pin money* it produces, and, therefore, offer their services at very low rates; thus still further damaging, sometimes disastrously, the interests of gentlemen who, after having most diligently tried to obtain success in life, at last fail. Not only so, but they seriously injure the matrimonial market for themselves, because those who might be "eligible" from a social point of view, cannot, as a rule, enter the happy state after having thus become stranded in business. An amusing and instructive confirmation of this comes to me from one of the colonial cities of our Empire, to which I need not refer.

A somewhat similar occurrence in the natural world happened in Australia, many years ago, when the Victorian miners, after killing off the birds which preyed

upon the snakes of the district were themselves driven out by these reptiles, because they had increased so much in number. These cases clearly show the danger which sometimes arises when people unduly, though perhaps unconsciously, obstruct nature's laws.

I mention these facts merely to give a fair reason, in conjunction with what has already been said, for the cruel position in which multitudes of men are now placed, while still young and full of energy, owing to the densely overcrowded state of almost every branch of business one could name, through the unwise anxiety manifested by those who, even amidst working-class surroundings, aim at obtaining "genteel" employments which have now become highly unsatisfactory. The occupation, above all others, which has perhaps suffered most in this respect from the opposite point of view, is that of the domestic servant of the really good, and useful, and contented, and honoured type of our early days, which is much to be regretted. If those of the present would only educate themselves to the standard of excellence which prevailed thirty years ago, I may confidently say that they would find ample scope for their valued services in the best families of Canada, as well as in those of the British Isles.

As Mrs. Birt has just arrived from Montreal, I learn from her that the Dominion is in an increasingly prosperous condition, and full of employment for those able and willing to work. She is willing to give good advice to young men who wish to train themselves for farming, market gardening, or for ranching occupations. It may be added that she has not only had thirty years experience of the Dominion, but has never taken any people in hand, of whom she could form even moderately fair opinions of character and working capa-

bilities, who could not certainly have succeeded in Canada better than they ever could have done in this country.

I hope no one will fancy that I have written unkindly or unauthoritatively on the present-day features of business life at home. Far from it. During the preparation of this volume I have come to know much that could not otherwise have been discovered. My object, therefore, throughout, has been to endeavour to show how people may benefit themselves in another land, and if only a few are thus enabled to do so, I shall be happy.

And now, let me take the highest ground I can get, and give a few hints, if possible, in other lines of thought which may be useful to some at least.

Throughout this treatise I have endeavoured to indicate many important things which deserve close study, so that people who have few opportunities of knowing them may thereby be instructed. Let me now suppose that, through some unexpected turn of fortune, my readers have become millionaires. What, however, may we ask, is success, even at the best, but a *shadow* when one's existence is so uncertain? What is fame? What is honour—as well as riches? Most admirable possessions, no doubt, but, for the same reason, transient in the extreme.

For my own part I value all these treasures only for what they are fleetingly worth; fortunately, however, amidst the vacillations, and uncertainties, and successes, and disappointments one has so often met, I have learnt invaluable lessons which, for a long period, have been well tried and proved. Besides this, having been a devoted admirer of Nature and of the natural sciences nearly all my life, I have from these learnt much in the

realms of practical theology of an exquisitely simple and beautiful nature.

Through having so frequently contemplated the infinities of space, the machinery of the universe, and the mechanism and construction of our own little sphere, and our own little selves, I have been thrown into close touch with the Great Designer and Creator of all. Whilst, too, the heavens have been telling their own wondrous story in silent majesty as I gazed on their magnificence, I have drawn many valuable hints from them as well.

In professional life I have passed through many a difficulty and danger whilst entering upon new enterprises, simply because, though good in detail matters, I was weak in *generalship*, and therefore exposed to errors of judgment which in one form or other have wrecked many of the cleverest people. And yet, just because I did my best in my own way, and, feeling all the time "like a little child which knew not how to go out or how to come in," let the good Lord of heaven and earth do the generalship, I have never entered upon a movement unconsciously charged with the elements of failure without having these pointed out to me in such an "accidental" manner, either by flash thoughts, or otherwise, as to prevent me from ever claiming any credit for the success which followed.

As one example of this it may be mentioned that when, in the year 1873, I was casting about for some way of commencing business as a consulting engineer, almost everyone I spoke to on the subject said, "It is no use for you to start for yourself in *these* times, as there are too many in the field already, unless, indeed, you have friends who can give you employment." I had, thus, great discouragement on all sides, as none of

my relations or friends seemed to have any of the influence I needed, and yet, one fine afternoon, by sheer accident, I unexpectedly met a gentleman who offered me a desk in his office when I had something to do, and within an hour I had obtained work which brought me in my first five guineas in private practice.

More than that, I soon obtained a whole office to myself, and succeeded much better than I anticipated in obtaining a very diversified practice, until about the middle of the "eighties," when, through obnoxious innovations of various kinds, induced by bad commercial times, and other movements which operated against the "consulting" fraternity, I was in danger of being stranded.

Just at this period I was, against my wish, drifted to the Clyde for my holidays when I had previously arranged to go elsewhere, and, strange to say, whilst travelling through its lovely scenery, and amongst the happy hunting grounds of my early days, I received a flash idea which, when well matured, developed into a new line of action that enabled me to utilise profitably the stores of knowledge diligently obtained during past years, but now, apparently, of little value.

Want of experience on many points soon landed me in difficulties, but, eventually, through a never-to-be-forgotten series of unforeseen events, the enterprise, which was originally honeycombed with the germs of failure, became quite a success, and enabled me at last to weather the threatened storm.

As the last notable example of similar experiences it may be mentioned that my sailing day from Liverpool on the special mission which originated this book was selected for no other reason than my desire to go by the S.S. *Dominion*, without any reference whatever to

subsequent movements which had to show themselves. Notwithstanding this I arrived in Montreal just in time to meet all the important people who had the power of making my tour the great success it certainly was, either immediately before they went away for their holidays, or after their return from long tours. Any other sailing day would have more or less spoilt my expedition in various ways, as I afterwards discovered.

With all these facts in view, is it to be wondered at that I am one of the liveliest and happiest of "Happy Travellers?" I think not.

The world in general little knows how much it is indebted to the *flash* or unexpected thoughts of sometimes very humble individuals as well as others. It was one of these which caused William Merritt Singer, a working man in the city of Boston, to perfect the sewing machine, after other people had tried to do so for one hundred years.

Lord Armstrong, at the time a Newcastle solicitor, received his flash idea from mountain rills, which, in developed form, originated his gigantic system of hydraulic machinery, and made him an engineer. At a time, too, when heavy wrought iron ordnance was frequently bursting because the forgings could not be made sound enough, it was the same gentleman who caught the idea from the layers of an onion, which caused him to invent his famous built-up "Armstrong Gun." And so on, endlessly, throughout the realms of art and science.

There are two glaring errors of judgment frequently to be found amongst people of to-day, one of which is that the close of one's life is the *end* of it, no matter what the grand future may be which lies beyond. In my opinion it is only the Gate of Life, or, at least,

under certain conditions, merely leaving the land of the dying for the Home of the Living. To leave the mists of earth so that we may breathe Celestial air. To feel invigorated, and find it Immortality. To discover at last, after losing many of our loved ones, that we have reached new Territory "Where heart meets heart, and no more they part, who meet in the Better Land." All this is what is silently expressed by the too often dreaded term—"Death."

The second error is in supposing that people who hold the theological opinions of the late Earl of Shaftesbury, Frances Ridley Havergal, and General Gordon must be melancholy and unhappy beings who can neither honestly laugh, nor say anything amusing in case it should be considered inconsistent. What a mistake for anyone to make! when there are multitudes of good people around us to-day who, whilst running upon the lines of those we have named, are amongst the brightest, the merriest, and the most attractive one could meet. Long life to their honours!

Amongst those who have most kindly supplied me with the latest facts concerning things Canadian, has been Dr. William Saunders, the director of the Dominion Experimental Farm at Ottawa. Whilst this chapter was passing through the press, I received a letter and paper from him regarding a critical tour he had just made through the N.W. Territories and British Columbia, etc. This resulted in the discovery that there is a wonderful development going on in the Far West, and especially in the mining regions, such as those we have referred to, as well as in those traversed by the new C.P.R. line through the Crow's Nest Pass. By means of this railway large and valuable deposits of coal have been reached, the output of which has now become

enormous. Indeed, the whole district is, in population and otherwise, advancing by leaps and bounds.

During my last day in Canada I finished off my visits still in abeyance, and after carefully packing my treasures left the Windsor Hotel at 11 p.m. to go on board the R.M.S. *Vancouver*, which was to leave at daylight next morning. When September 17th set in I was up at five o'clock, and as we steamed away at 5.15 saw Montreal city fade out of sight. On arrival at Point Levis at 3.30 I had the honour of receiving a letter from the Governor General, kindly inviting me to a Reception at the Citadel of Quebec, and to this I immediately went. I thus had an excellent opportunity of seeing, under the most favourable circumstances, the élite of that city of whom, even from a very casual survey, I formed a high opinion. Very early next morning we got under weigh, and with a run of 770 miles before us eventually passed Belleisle, and immediately afterwards reached the open ocean. After this we had a very pleasant passage across the Atlantic, and on September 27th landed in Liverpool, thus happily ending my tour which has already been described.

This volume may be called a "book," only complimentarily, I suppose, as no doubt I have said many things which learned and stiffly conventional writers would have omitted lest their remarks should have been considered "objectionable," "imprudent," "unwise," and so on. To me it has been a splendid opportunity for speaking in the simplest, freehand manner like a friend, and talking like a brother about the people whom I met day by day during my delightful trip, and who contributed so greatly to my happiness while amongst them trying to note their country for the benefit of others.

Before closing this narrative I must thank most cordially their Excellencies the Earl and Countess of Aberdeen, and all those throughout the land who, from first to last, aided and encouraged me in my enterprise at every point, and caused my work to become a labour of love.

To all of these I now send kind regards, as well as to the ladies who proved such charmingly instructive companions of travel. To the young, and to the very young ladies who were similarly associated with me, I, of course, send my love, coupled with the hope that some day we may meet again.

I must also emphatically thank those who finally revised my MS., so that everything might be correct, in order, and down to date. Especially to be mentioned in this respect are various members of the Dominion and Provincial Governments, and numerous private people of great local experience. The only correction I have to make is in reference to Mr. Edwin T. Garner, who was one of our passengers in the S.S. *Dominion*. In my remarks upon this gentleman as chairman of our evening entertainment on board of this ship, I said, by mistake, that he had *appointed himself* to the position, the fact being, however, that he was elected by a committee of five, after three days protest on his part, an amendment which, for obvious reasons, it is necessary to make.

And now, expressing the hope that I have in this volume done at least fair justice to people and things Canadian, "The Chiel," "The Happy Traveller," "The Author," and myself, bowing our best and smiling our sweetest, retire from the scene.

It may be well here to describe in detail the arms of the *Dominion* and also of the various Provinces, which adorn the cover of this volume. Beginning with the top left-hand square, we have the maple leaf surmounted by a cross representing *Ontario*. In the right hand square we have a lion placed between the fleur de lis and maple leaf, for *Quebec*. The lion over the masthead of a ship, for *New Brunswick*. The fish between three thistles, for *Nova Scotia*. The rampant buffalo beneath a cross, for *Manitoba*. The wreath enclosing a lion and crown, for *British Columbia*, and the two trees in a field, for *Prince Edward Island*, all of which in combination, and in colours, instead of gold as shown, have a handsome appearance.

D. MARPLES AND CO., PRINTERS, LORD STREET, LIVERPOOL.

SUPPLEMENTARY CHAPTER

TO

3,800 MILES ACROSS CANADA

BY

J. W. C. HALDANE, C.E., M.Inst.Mech.E.

SUPPLEMENTARY CHAPTER.

A TRANSFORMATION SCENE—Industrial aspects of Canada—Enormous increase of Emigration—Electricity: What is it?—A new Power Station—Traffic on the Great Lakes—The Georgian Bay Canal—New Hudson's Bay Route—North-West Provinces of To-day—Magnificent system of Irrigation — Prodigious extensions of the Railways — Tourist Traffic—Improvements in the Mountain Districts—Recent Explorations — Muskoka Region and its Marvels — New Grand Trunk Pacific line—New Canadian Northern, and other lines—Water Transportation—Ocean, River, and Lake Steamers—Visible effects of the New Era—The Maritime Provinces — *Sydney* quadrupled — *Quebec* — The greatest Bridge in the World—*Montreal*—Great Fires at McGill University—An unsuspected cause of Mysterious Fires—*Ottawa*, as the Vice-regal Capital—*Toronto*, as it is—*Hamilton's* Electrical progress—Fabulous advance of *Winnipeg*—How a serious Difficulty is overcome—*Brandon's* Progress—*Regina*, the N.W.T. Capital—Marvellous changes—Effects of Irrigation — *Calgary* quadrupled—*New Westminster*—*Vancouver*—*Victoria*—Under new Lights—The various Mining Regions—Official Opinions of Canada—Useful Hints.

O rapidly, and so variously has Canada advanced of late, that I have been induced to add a new chapter to a book which has given great pleasure to very many readers, and which, I hope, will thus prove additionally interesting. Fifty years ago, the Western Provinces were a vast untrodden wilderness. Their rich agricul-

tural land was unknown, their valuable mineral treasures equally so, and, as a natural consequence, their industrial energies had to be awakened, and their trade and commerce created.

The master movement which initially produced this happy result was the opening up of the country from ocean to ocean by the Canadian-Pacific Railway, and consequently, the discovery of many of its valuable features, which proved more acceptable to the Canadians themselves as time rolled on, and more attractive to other nations as intercommunication with the world was established by means of steamships. Other railways and other steamships followed, and hence, manufactures of all kinds have so developed that to-day that vast continent is progressing by leaps and bounds, and indicating wonderful possibilities in the near future.

What I have already said in this volume, has been more or less confirmed by recent events. Let me, now, however, make a few observations upon the *Industrial* aspect of Canada, to which too little attention has hitherto been paid, as it so closely affects her welfare, and enables people to form a true estimate of her position among the sister nations of the Empire.

Since 1878, when a complete system was organised, the invested capital of which, in 1881, amounted to £30,000,000, so many improvements have been made that, to-day, this sum has reached fully £100,000,000. Since the latter year, however, Canada has so thoroughly equipped herself with all the great foundation industries usually to be found amongst progressive races, that there is scarcely an article in general use that is not well and cheaply made, especially in the provinces of Quebec and Ontario. These industries include the extensive manufacture of iron and steel from the crude ore;

the execution of great engineering enterprises, as well as the building of locomotives and rolling stock generally on a vast scale. Two good and recent examples of this were the placing of an order for the construction of 24,000 freight cars with one firm, and immense quantities of locomotives and various kinds of railway plant with other firms.

The Textile industry is represented by about 350 mills throughout the land. Very numerous, and sometimes very large wood-pulp and paper-making establishments have arisen owing to the enormous demand for the pulp which the timber of the country so abundantly produces, and which is much used in other ways. Furniture, musical instruments, boots and shoes, and a great variety of minor productions, have an important export business. A large sugar refining industry is to be found in Quebec and Nova Scotia, and the beet root sugar manufacture has been well established in Ontario and Alberta, whilst that of cement for buildings has just doubled its previously great output in one year.

On the other hand, the imports from Great Britain and other countries are continually expanding, thus showing that the local factories, in spite of their increase, are unable to cope with the growing consumption which the rapid influx of population still further accentuates, as indicated by the fact that between 1897 and 1906, about 880,000 people settled in Western Canada alone, which the following table will clearly indicate.

CANADIAN EMIGRATION RETURNS FROM 1897 TO 1906.

	1897.	1898.	1899.	1900.	1901.
British	11,383 ..	11,608 ..	10,660 ..	10,360 ..	11,810
United States ..	712 ..	9,119 ..	11,945 ..	15,500 ..	17,987
Foreign	7,911 ..	9,285 ..	21,938 ..	18,737 ..	19,352
Total ..	20,006 ..	30,012 ..	44,543 ..	44,597 ..	49,149

	1902.	1903.	1904.	1905.	1906.
British	17,259 ..	41,792 ..	55,913 ..	64,863 ..	98,257
United States ..	26,388 ..	49,473 ..	43,444 ..	44,427 ..	63,781
Foreign	23,732 ..	37,079 ..	35,392 ..	35,351 ..	53,874
Total ..	67,379 ..	128,344 ..	134,749 ..	144,641 ..	215,912

A glance at the above will show that while, during the first five years of the decade, the emigration from the British Isles remained almost stationary, that from the United States and foreign countries was constantly increasing. During the last five years, however, the increase from every source was of a very marked nature, chiefly owing to the better knowledge which now prevails regarding Canada and its enormous field for the industrious. Fresh evidence of this is given in its official return of manufactures for 1906, which shows that their value amounted in that year to 712,664,335 dollars, as compared with 481,053,375 dollars in 1901, or an increase of 48 per cent. during the last five years. In many local instances, however, this has been doubled, trebled, and even quadrupled.

The rich supplies of coal, iron, and water-power, and water-transportation which the Dominion possesses, has had, of late, a great effect upon the development of gigantic steel and other establishments. Indeed, it may be said, that the possibilities of water-power are beyond calculation. Mr. Keefer, an eminent engineer of early C.P.R. fame, has estimated the *Ontarian* hydraulic system alone at ten million horse-power, which can be utilised by means of turbines in transmitting electrical energy for hundreds of miles around each power station. And this, too, in the most compact and inexpensive form, over the mountains and valleys and plains, and in every possible direction and quantity, to suit the require-

ments of large or small consumers in little villages, as well as in great cities.

This power has been described by Sir William H. Preece as a "subtle and invisible force that pervades the earth and permeates the heavens, whose energy can be utilised when desired, but which disappears when done with, 'like the snowfall on the river, a moment white, then gone for ever.' Its paradoxes are beyond belief, its contradictions few could imagine, and yet, although the laws of Electricity are more definitely determined than those in many other branches of science, we cannot say what this wonderful agent really is, and so we call it a fluid."

Such, then, is the mysterious force which is gradually revolutionising the motive power of our methods of travel and manufacture, and also international communication over land and sea, by means of wireless telegraphy for thousands of miles at a stretch.

The latest and one of the most notable hydro-electrical power stations in Canada is that at the Shawinigan Falls, on the river St. Maurice, about midway between Montreal and Quebec, and around which a large manufacturing town has arisen for economy and convenience in working.

So far as transportation on the Great Lakes is concerned, it may be said that last year about sixty million tons of freight, chiefly consisting of iron ore, grain, lumber and coal, were carried over them by means of steamers from 6,000 to 10,000 tons. So prodigious, however, is the development of Western Canada, that the open season of seven and a half months is not sufficient for the traffic, and this is threatening such serious consequences that the proposed Georgian Bay Canal, made suitable for the above vessels, and already

described in Chapter III, has become a greater necessity than ever. The opening of the Hudson's Bay route, too, by the formation of a line to Fort Churchill, is another of the great schemes in prospect for the relief of the north west provinces.

The basis of the prosperity of the manufacturing industries of the country must ever rest upon its agricultural developments, for obvious reasons. Five years ago the population of the north west was 466,000, and the grain crop 43 million bushels. In 1906 the former reached 1,000,000, and the latter 200,000,000 bushels, one half consisting of wheat. This crop was grown on less than 4 per cent. of the net area of land available for cultivation in the above territory, and as its 1,000 miles of railway were utterly inadequate to meet the pressure thrown upon it, 5,000 additional miles are now under construction by the Canadian Pacific, the Grand Trunk Pacific, and the Canadian Northern Railway Companies.

I have already described the advantages of good irrigation where the rainfall is uncertain, hence, it is only natural that, at the present time, vast schemes of this nature are not only in progress in Alberta by the C.P.R., but are also under consideration for other places. Their recently completed system of Irrigation Canals, which is the largest of its kind on the continent of America, takes water from the Bow River, and so effectively acts upon 3,000,000 acres of land as to render it much more valuable than it has hitherto been.

In the foregoing remarks I have only indicated the main *Industrial* conditions which have so rapidly worked some, at least, of the great changes just mentioned; let us now, however, refer to the *Railways* of Canada which have so greatly accentuated the latter in various ways. From the "Annual Report" of the

C.P.R. for this year, we gather that, taking for a basis their early lines from Montreal to Vancouver—2,904 miles—to Halifax, 758 miles, and to Quebec, 173 miles, there have been, since 1886, enormous extensions throughout the land, but that, during the last three years, the steel roads of the company have been spreading in every direction, until their total length now exceeds 13,000 miles.

So greatly, too, has the passenger traffic increased from commercial, emigration, and pleasure-seeking standpoints, that, during last season, it became necessary to add a new fast train to the trans-continental service; thus, making *three* instead of two trains on Mondays, Wednesdays and Fridays. This train is faster by twelve hours on the run to Vancouver than either of the "Imperial Limited" trains which leave Montreal morning and evening for the west, and cover the distance in 85 hours. During this season, however, the flying train has run on the three other days of the week, as well as on those named, owing to the fact that the ocean ferry business between Montreal and the British Isles and the Continent has never before reached such a high watermark. Indeed, so enormous has the passenger traffic become, that the principal steamers of the various lines frequently have their lists filled up a month or two before sailing. To meet, in some degree, however, present requirements, the C.P.R. has recently placed two splendid new and fast *Empress* steamers on the station, each of which is of 14,500 tons, and of sufficient speed to make the open sea passage from Liverpool to Belleisle, or 1,656 knots, in four days, the rest of the passage to Montreal, fully 900 miles, being by the Gulf and River St. Lawrence.

Amidst the mountain scenery of British Columbia

and Alberta many extensive improvements have been introduced for the benefit of ever-increasing numbers of tourists. The National Park has been extended until it is now the largest in the world, and embraces some of the grandest of the neighbouring ranges, to traverse which in safety Swiss guides have been liberally provided, and also additional means of special local transport. In these, and in many other ways, including house-boat service on the lakes, this region is proving, more than ever, a source of interest. So much so, indeed, from a *science* as well as from a popular point of view, that a superb and delightful book, in two volumes, has recently been published by the Department of the Interior, at Ottawa, entitled *The Selkirk Range*. The author of this—Mr. Arthur O. Wheeler, F.R.G.S.—has, in a masterly and exhaustive manner, described not only its geological, physical and scenic conditions, but much more of an interesting nature regarding the work of previous surveyors, as well as his own.

To these are added a few valuable notes upon the mountaineering expeditions of Mr. Edward Whymper and others, including ladies, in the same region, also much in reference to its Natural, Historical and Botanical conditions, the whole being illustrated by many beautiful plates. The second volume contains a series of very expressive large scale maps, charts, panoramic views, etc., of these mountains as an aid to the text.

While on the subject of tourist travel, it may be observed that no system of transportation on the American Continent affords so wide a range of lovely scenery of a different nature as that of the *Grand Trunk* Railway and its immediate connections. With fully 3,500 miles of track, it offers endless variety and novelty, and nowhere is this more remarkably to be found than in

the beautiful *Muskoka* region, of marvellous formation, adjoining Georgian Bay. This locality abundantly provides fishing and shooting and hunting, boating and yachting and steam-boating in every direction, amongst lake and island surroundings sufficient to create in one's mind the most extraordinary visions of the once powerfully transforming Ice Age. Only recently, too, the C.P.R. opened a branch line serving the same district.

In addition to the lines of railway just mentioned, the *Grand Trunk Pacific*, of 3,700 miles in direct length, and with about 600 miles of branch lines, will run across the Dominion from Halifax to Prince Rupert, on the coast of British Columbia, and Dawson in Yukon, especially traversing the new provinces of Keewatin and Saskatchewan. As all of these pass through much of the best farming land in the world, their splendid advantages will be clearly seen.

The *Canadian Northern* is another of the great transcontinental railways in progress, still farther to the north. With the exception, however, of a few short lines in eastern and maritime Canada, those completed chiefly extend from Port Arthur to Winnipeg, passing onwards through the great and now extremely popular Saskatchewan Valley to Edmonton, with a total present length of 3,800 miles, a prodigious traffic already waitfng for them, and much more assured in the future.

Only recently, the *Atlantic, Quebec and Western* Railway Company has been formed for the purpose of constructing a line of 362 miles in length, from the deep-water harbour of Gaspé downwards to Chaleurs Bay, eventually joining the Grand Trunk Pacific and the *Intercolonial* Railway; the latter of which extends from Montreal to Quebec, on its course to St. John, etc.

The *Water Transportation* of Canada has been quite

as well studied as that of the land, since not only has the C. P. R. a large number of fine ocean steamers on the Atlantic, Pacific and Coasting Stations, but many others of lesser degree for lake, river, and ferry service. Other companies, too, have fleets of their own for similar purposes, and, in addition to these, the Canals of the country are not only extensive in their ramifications, and liberal in their dimensions, but are well worked, the yearly tonnage passing through the Sault St. Marie Canal alone, lying between lakes Superior and Huron, being fully three times that of the Suez.

And now, we come to the consideration of the visible effects of all these great developments upon the cities and towns of Canada. *Nova Scotia*, as one of the Maritime Provinces, is rich in minerals of various kinds; rich in iron ore of the highest quality; abundantly supplied with coal; rich in soil for agricultural purposes, and boundless in its forests, which produce a vast timber trade, and great wood pulp industry, all of which are greatly benefited by the improved railway systems. Its climate is temperate all the year round, and its fisheries are inexhaustible Its capital, *Halifax*, of 50,000, is an excellent winter port, and an increasingly active centre of industrial enterprise and general commerce.

St. John—50,000—the chief timber loading winter port of New Brunswick, is swiftly advancing on lines of its own, which its geographical position, and splendid harbour, and valuable surroundings, so easily render capable of development. An excellent example of the energy of its people is the fact that when, in 1877, nine miles of streets were swept by an awful conflagration, which caused a loss of about 30,000,000 dollars, a new and finer city rapidly arose out of the ashes.

The neighbouring seaport of *Sydney, Cape Breton*, in

latitude 150 miles south of Paris, has had a wonderful experience of late. From a small town of 3,000 only seven years ago, it has sprung into an active and vigorous city of nearly four times the size to-day, the reason being the installation by the Dominion Iron and Steel Company, in its midst, of a very large and admirably located engineering establishment.

Of *Quebec*—81,000—and *Montreal*—400,000—it may be said that, although the fire and enthusiasm of the West are not in either of them so distinctly traceable as some might fancy, great changes and improvements have nevertheless been made in both. A short distance above Quebec the greatest cantilever bridge in the world is now building across the St. Lawrence. Its widest span is 1,800 feet, or 90 feet more than that of the Forth, clear headway 150 feet at highest tide, and depth of water in middle of river 180 feet.

Montreal has been marvellously improved in its streets and public buildings, the two most intimately associated with myself being the Bank of Montreal and the Windsor Street Station of the C.P.R. The former has been rebuilt in palatial style, and the other handsomely enlarged to suit the times. The recent destruction by fire, however, of the Engineering and Medical buildings of McGill University is deeply to be regretted. In a letter from Dean Henry T. Bovey, of the former, he tells me that "the disaster has been perfectly appalling, and will cost about £300,000, but what we most keenly feel is the loss of our technical library, containing 6,000 volumes. In aid of a new one, which I have taken upon myself the task of replacing, I have already received many generous responses from publishers, editors and authors everywhere. Your own books, of which we had a complete set, were found extremely useful by the

students, whc constantly consulted them, and were much interested in them. The assistance we are getting from our friends in all parts has been so handsome, that we are now proceeding with the reconstruction of a new Engineering Building, which will be larger and better every way than the old one."

A hint may here be given which should prove valuable to many. When, long ago, I was on the designing staff of Messrs. Neilson & Co., Hyde Park Locomotive Works, Glasgow, the foreman of the great first floor machine shop left it one night at six o'clock in perfect safety, but on returning next morning, at 5.45, he found an old heap of dirty, oily, cotton-waste lying on the floor in an incandescent state, ready to burst into flame at any moment. Had it done so, a costly establishment would have been destroyed, and, to this day, no one would have known the cause, namely, *spontaneous combustion* through chemical action. For this same reason a private house I came to know about in later years was nearly set on fire, through oily cloths having been thrust into a kitchen drawer.

I shall ever gratefully remember the highly valued friends I made in the beautiful city of Montreal, and who unitedly gave me the keys wherewith to unlock the treasures of the Dominion, which provided me with the information upon which this book was founded, and which I have often since had otherwise to use.

Of *Ottawa*, little remains to be additionally said. As the seat of Government, and the home of the Governor General, it is the centre of all that is elegant, refined, and graceful, without the stiffness and exclusiveness which so unhappily mars much of the influence of the best society in some of our own cathedral and fashionable cities. Moreover, its population of 50,000 ten

years ago, and nearly 70,000 to-day, indicates a marked industrial prosperity which is very gratifying.

What has been said of Montreal may, to a large extent, apply to *Toronto*, which in every way has made tremendous strides, although extensively destroyed by fire in 1905. With a population of 195,000 in 1898, and nearly 300,000 to day, the forces at work around and within it may be fairly estimated, especially when these are known to have produced great extensions of the city, much improved educational advantages, and numerous magnificent public buildings.

Hamilton's geographical position at the head of Lake Ontario, and supplied with a deep-water canal, affords the best shipping facilities to the North-West Provinces and the European markets by water, while her railway advantages are not excelled by any city in the Dominion. The central point around which her prosperity revolves is that of an extremely varied manufacturing industry, aided by very many electrically and otherwise driven establishments, full of life and energy enough to delight the heart of Mr. Chamberlain if he saw it. There are, in the aggregate, about 300 factories of every description, all of which are equipped with the best labour-saving appliances for ensuring rapid and economical production. One of these will shortly cover with many immense buildings, up to nearly 1,100 feet in length, an area of 125 acres, and, supported by other establishments throughout the land, be fully able to meet the agricultural requirements of the North-West already referred to.

And now we come to the wonderful city of *Winnipeg*, the recent advances of which have been so extraordinary, and to many so fabulous, as to require a detailed description. In 1898 its population was 40,000.

In 1906, 111,000. One of the causes of Winnipeg's greatness is the fact that she is the receiving and distributing centre of a very rapidly growing population for some hundreds of miles around. Then, again, in consequence of this, her railway traffic is enormous, not only of a trans-continental nature, but, by means of sixteen pairs of lines radiating in every direction, the C.P.R. alone having 120 miles of sidings, which make them the largest railway yard in the world. And, thirdly, with at least 300,000 horse-power of electrical energy available for power and general manufacturing purposes on a grand scale, there is practically no limit to the expansion of a city which has made so many sweeping changes, and is rapidly spreading out on all sides, just as Chicago has done, and to which reference has been made on page 107.

During the last three years the improved *flat* system of London has become very popular in Winnipeg, as the "Servant Question" is unbearable, and all the more so as the numerous English, Scotch, and Irish girls who land in the West are married straight off by the neighbouring farmers. Let me here say, however, that one of the best ways of overcoming the difficulty is for small families to live in flats fitted with the best gas-cooking and heating appliances, aided by the partial daily service of willing women, and also the daily and very useful help systematically supplied by the assistants of the Mansions Companies.

Homes of this nature are more economically and better worked than others, and, what is very important, the residents can at any time leave their houses under the care of the estate agent if they wish a little change. One of the Scotch city mottoes is—"Let Glasgow

so abundantly deserves, and as she certainly will do, more and more, as the days go by.

Brandon, as one of the best grain centres in Manitoba, has well caught the infection of ambitious progress which everywhere prevails in the adjacent provinces, and which is indicated by the fact that her population has very rapidly sprung from 5,800 to 12,000. Much that has just been said of Winnipeg equally applies, though of course on a smaller scale, to this charmingly located little city; and so we pass on.

Regina is the capital of the North-West Territory, which includes the provinces of Saskatchewan and Alberta, and is the seat of the Lieutenant-Governor. When I passed through this miniature town of 2,200 inhabitants on my westward tour, I little thought that, not long afterwards, it would possess a population of 10,000, and keep going ahead like a steam engine under greatly improved conditions. And yet, so it is. A *wonderful* place is this Regina. As I gaze at the map of the country surrounding it, with numerous railways leading to one centre; as I admire its splendid Post Office, and City Hall, and new Parliament Buildings, to cost 3,000,000 dollars, and other public edifices; its beautiful churches and private residences; its Stanley Park, and Wascana and other lakes; I feel that the Saskatchewan capital is now an infinitely more suitable home for the Lieutenant-Governor and family than when I saw it.

Further even than this, let me add that, from what has been done in so short a time, and with the light of modernly irrigated Egypt around me, I foresee an amount of practically fabulous prosperity in this region which its magnificent system of irrigation, recently introduced, is almost sure to bring about.

When, in the year 1883, the C.P.R. main line constructors reached a point near the western boundary of the great prairies, something happened which caused them to stop and consider the capabilities of the district. Hence, a few log huts at once represented the hopes of those who fancied that the then Hudson's Bay Fort would some day become a city on the banks of the Bow river. Such was the nucleus of what became eventually the important frontier town of *Calgary*, of 4,500 in 1898, but which has now reached 15,000. The adjacent towns of Edmonton to the north, and Macleod to the south, have also richly prospered, and with Calgary as a main centre, have proved valuable sources of supply to the inhabitants of the North-West, and also in the mountains along the old and new routes of the C.P.R. to Vancouver and elsewhere.

And now, starting from Calgary in the "Pacific Express," and with the Rockies increasingly visible for the next 62 miles, we pass their gateway and soon afterwards arrive at Banff to spend a delightful day. The early departure of next morning enables us, after busily viewing many magnificent scenes, to breakfast very heartily at Field, at the foot of the wonderful Kicking Horse Cañon. This is followed in the afternoon by an equally acceptable dinner at Glacier House, in the Selkirks. Pursuing our course past Revelstoke, and outwards during the night amongst mountains, lakes and rivers, we breakfast at North Bend, and on reaching Yale, at the foot of the Fraser Cañon, have traversed 480 miles of stupendous mountain scenery, and stopped at hotels so much enlarged and improved as to be hardly recognisable. The rest of the journey is quickly passed over by the "Pacific Express," whose now flying speed enables

us to enter the new and spacious terminus at Vancouver dead to the minute.

The three important seaports of the west are *New Westminster*, *Vancouver* and *Victoria*, the first-named of which hardly needs additional description, beyond merely stating that the salmon of the Fraser River seem more numerous than they were, its trade and commerce better than ever, and the now greatly enlarged, and improved, and beautifully located town looks more worthy than ever of the title of "Royal City," given to it because Queen Victoria changed its original "Queensborough" to the name it now bears.

Of Vancouver and Victoria it may only be mentioned that any reference to their new and splendid public buildings, and greatly extended boundaries, and handsome streets and parks, would only be to needlessly repeat much of what has been described elsewhere.

The former is built upon a peninsula almost entirely surrounded by water, and, therefore, its inhabitants enjoy to the utmost the bracing sea air tempered by the rampart mountains of the coast range to the north. With its lovely scenic attractions and brilliant sunshine, it is an ideal stepping-off-place for those who come from the heats of Central Canada, and of Oriental countries; while for convalescents, the life-giving breezes of my own lovingly remembered Pacific of early days in Australia, cannot be surpassed. Its beautiful Stanley Park is almost an island, and its neighbouring English Bay a charming bathing resort. Here, however, its water-chute "goes one better" than *ours* at Earl's Court, as the boat on reaching the water sinks beneath the wave, and leaves its late occupants to swim for their lives, and repeat the performance as often as they please.

In 1898, the population of Vancouver was 20,000,

to-day it is 70,000; while that of Victoria was, and is, similarly 20,000 and 40,000, the contrasting advances clearly showing that the former, as a *mainland* terminus, necessarily, and for obvious reasons, takes the bulk of the trade of the west.

Victoria, on the other hand, is the main point of arrival and departure for the gold regions of the Yukon, for which steamers sail almost daily with cargoes of hopeful prospectors, who are well advised before leaving. Some idea of the distance traversed may be gathered from the fact that from Victoria to Klondyke direct, via Dyea, by sea, lake, river, etc., is about 1,575 miles.

While the whole of Canada produced, in 1904, 16,400,000 dollars in gold, the Yukon territory alone turned out ten millions in the same year, the area of its goldfield being 125,000 square miles. As this metal was only discovered on Klondyke Creek in 1896, it seems that the far North has a great future, as its "placer" or *surface* diggings are the richest known, and, under the greatly improved conditions of steam shovel and dredge, instead of hand pick and shovel, are the most easily worked, as indicated by the following:—A New York manufacturer removed his works to a Western river for the sake of cheap motive power. Soon afterwards a flood swept all his buildings away and ruined him. The same torrent, however, which proved so disastrous, washed away the surface earth and exposed a gold mine, by which he was eventually enriched.

Statistics regarding the output of all the minerals in the Dominion, and especially those of the wonderful British Columbia, are unnecessary; let me, therefore, only say that "B. C." generally, the Kootenay region, and Northern Ontario, are all having a *good* time of it in these matters. *Vancouver Island*, too, with its timber,

coal, minerals, and railways, etc., is accentuatedly on the upward grade, as all parts of the mainland certainly are. *Q.E.D.*—which was to be proved.

In the year 1903, about seventy members of the Chambers of Commerce of Great Britain and Ireland attended the fifth Congress of their Canadian brethren in Montreal, with the object of seeing the country for themselves, and forming their own opinions of it:—(1) as a field for investment of British capital; (2) as offering permanent homes for British emigrants; and (3) as an instance of great and unexampled national progress. The official statements of these gentlemen showed how strongly they approved of what they saw, and of which I need only give the following abridged examples out of many:—

Lord Brassey said—"Full of promise; I can see no limit to the expansion of the future."

Sir W. A. Holland, President of the Manchester Chamber of Commerce—"I believe the greater part of this territory to be capable of yielding untold agricultural and mineral wealth, and, as a home for British emigrants, I think the claims of Canada cannot be too widely known."

Mr. Charles Lancaster, of Liverpool—"I have, for some time, had considerable investments in the Dominion, and my recent visit to it has resulted in a large increase in these, which are entirely industrial. I know of so many who have succeeded in Canada by means of ordinary industry, and adaptability to new conditions of life, that I would choose that country before any other as a permanent home for suitable British emigrants."

Sir Theodore V. S. Angier, of London—"I consider Canada the finest field for investment the world can

offer. Its capacity for development in every branch of commerce, mining, manufactures, etc., is unbounded."

Mr. Kenrick B. Murray, Secretary of the London Chamber of Commerce—"Before I went out I used to regard the language employed by Canadians about the wealth and advantages of their land as so much 'tall talk,' but I am now quite as enthusiastic as they are."

I myself did think, at one time, that the language of our good friends was sometimes too picturesque to be practical; later on, however, I discovered that I had much to learn in many ways concerning the true state of affairs, and that, like the Immortal Queen, the half has not been told me.

With so many unskilled men in our land who cannot find employment, it would be well for them to know that 25,000 hands are required on the great railways of Canada in course of construction. The pay is good, so also are the feeding and housing, and it therefore seems to me much better to look after work of this kind in a new land, than hang on indefinitely in this one in a state of poverty, if not of destitution. This now seems to be more fully known than formerly, as indicated by the fact that the total emigration to Canada during the first ten months of 1907 was 254,077, an increase of 59,103, or nearly 30 per cent. above the same period of 1906. This, too, was largely due to a 40 per cent. greater number of emigrants from Great Britain during 1907 than in the former year.

If I had my own life to begin again, I would think a good many times before I entered any of the professions, for reasons given in chapters X and XXII, especially with the *Age Question* hanging, like the sword of Damocles, over my head. I also believe, more than ever, that young men in general, who are willing to

work, and are endowed with patience, and perseverance, and modest expectations, may, with great advantage to themselves, make a new home in the *New Land* to which the latest references have been made in this chapter, and concerning which the fullest information can be obtained in London from the offices of the High Commissioner for Canada, 17 Victoria Street, Westminster, S.W.; and also those of the Canadian Commissioner of Emigration, 11 to 12 Charing Cross, W.C.; the Agent General of British Columbia, Salisbury House, Finsbury Circus, E.C.; or the Dominion Government Agents at Birmingham, Cardiff, Liverpool, Dublin, Belfast, Glasgow, etc.

Having decided upon touring through Canada, you may cross from Liverpool to Montreal by either of the 12,000 ton triple screw, turbine-driven *Victorian* or *Virginian* of the Allan Line; or the new 14,000 ton *Alberta* of the Dominion Line; or one of the 14,500 ton *Empresses* of the C. P. R., all of which are magnificent ships. On reaching Montreal you will have the whole land to traverse in every direction, and eventually to Vancouver and Victoria by the route kindly given to me by Sir William Van Horne, as already described. On the return journey, *via* Moose Jaw, to the lovely Minneapolis and St. Paul, on the Mississippi, the rest of the trip may be varied until New York is reached, the homeward run being by one of the new Cunard 32,500 ton quadruple screw, turbine-driven flyers, *Lusitania* or *Mauretania*. For beauty of scenery, lovely weather, charming people to meet, amidst all the luxuries of highest-class travel, you will thus have much to delightfully remember for the rest of your days.

WORKS BY THE SAME AUTHOR.

PUBLISHED BY MESSRS. E. & F. N. SPON, LONDON AND NEW YORK.

Demy 8vo., cloth, 580 pages, with many high-class Plates and other Illustrations. Price 15s.

RAILWAY ENGINEERING,

MECHANICAL AND ELECTRICAL.

CONTENTS.

Chapter I.—Opening out a New Field for Enterprise.

Chapter II.—Pioneer Movements on New Territory.

Chapter III.—Plotting out the Deephaven and Bathurst Railway.

Chapter IV. — The Deephaven and Bathurst Railway during Construction.

Chapter V. — In the Depths of the Deephaven Railway Works.

Chapter VI.—Atlas Works of Messrs. Sharp, Stewart & Co., Glasgow.

Chapter VII. — Atlas Works — Great Machine Shop.

Chapter VIII. — Atlas Works — Boiler Shop Operations.

Chapter IX. — Atlas Works — Boiler Mounting and Engine Erecting Shops.

Chapter X.—Atlas Works—Locomotive Building and Finishing.

Chapter XI.—Narrow Gauge and Portable Railways.

Chapter XII.— Portable Line Rolling Stock—Horse, Cable and Electric Tramways.

Chapter XIII.—Amended Light Railway System—Goods Transport on Roads.

Chapter XIV.—Works of the London and North-Western Railway Company, at Crewe.

Chapter XV.—Railway Plant Manufacture on a Gigantic Scale at the Crewe Works.

Chapter XVI. — Wood-Working Machinery at the Crewe Works.

Chapter XVII. — Main Constructive Departments at the Crewe Works.

Chapter XVIII.—Special Labour-Saving Machinery at the Crewe Works—The Great Machine Shop.

Chapter XIX. — The Crewe Works Labour-Saving Machinery—*contd.*

Chapter XX.—Railway Rolling Stock.

Chapter XXI.—Tunnelling Operations of the Present.

Chapter XXII. — Railway Bridge Building.

Chapter XXIII.—The Electrical Engineering of Railways.

Chapter XXIV. — Electric Lighting, Electrical Motors, and Generating Machinery.

Chapter XXV.—Water Tube Boilers.

Chapter XXVI.—Water Tube Boilers—*continued.*

Chapter XXVII. — Gas and Oil Engines—Liverpool Overhead Electric Railway.

Chapter XXVIII. — Primary Aids to success in Railway Enterprise.

Chapter XXIX.—Opening of the Deephaven and Bathurst Railway—Results.

*** *For Reviews see next page.*

ABSTRACTS OF REVIEWS.

"Contains a general description of the more important constructive principles and processes involved in the making and working of a railway, detailed descriptions of the more important machines and tools employed being included. All is described in a readable manner. The work is well illustrated, and should prove useful to many."—*The Times.*

"Contains a great deal of information valuable to all classes of engineers and students of engineering."—*The Scotsman.*

"A very readable—one might almost say fascinating book—containing much information. We venture to recommend it most favourably to our readers as one which they will find very useful."—*The Railway Engineer.*

"The object of this volume has been most effectively attained. We can recommend it as a highly useful one."—*Railway Magazine.*

"The style of writing is clear and easy, and well calculated to draw the attention of the reader to the interesting problems involved in the design, construction, and development of railways generally."—*The Athenæum.*

"A handsome and exhaustive work. We have nothing but praise for the instructive and efficient way in which Mr. Haldane has treated a difficult subject so that the interest may appeal to the man on the street, while the practical value to the student is unimpaired."—*The Literary World.*

"The author has carried out his plan in a highly instructive and satisfactory manner."—*Morning Post, London.*

A mass of valuable information."—*Daily Chronicle, London.*

"The author's object has been to interestingly describe the latest phases of railway engineering and its surroundings in all departments, and in this he has admirably succeeded. The difficulties experienced in the construction of the Canadian Pacific Railway are well described. A capital description is given of the London and North-Western Railway Works at Crewe, and their special labour-saving machinery. The illustrations are numerous, and produced in capital style."—*Transport.*

"Mr. Haldane is the author of deservedly successful volumes. His *Railway Engineering* is quite equal to these. A number of capital illustrations enhance the interest of this very readable book."—*Mechanical World.*

"Those who know the author's other works, have learnt to expect that he will treat lucidly, exhaustively, and graphically any technical subject which his ripe experience enables him to handle."—*Yorkshire Post.*

"An exceedingly useful volume. It should be interesting not only to those who are connected with railway life, but also to that large and growing class which takes an interest in railways generally."—*Newcastle Daily Leader.*

"It would require an almost encyclopædic knowledge to pronounce a judgment upon this substantial volume, but technical writers have already recognised its value."—*Western Daily Press, Bristol.*

"This most intereresting and attractive book gives indication of close observation on the part of the author."—*The Marine Engineer.*

"Mr. Haldane has described the building of a railway from the preliminary survey to the running of the first train, the various details of working and contractors' hindrances being illustrated by reference to accomplished railroads.

"In all this the author has admirably succeeded. Owing, too, to his many-sided views of the subject, the volume will prove useful to pupils at technical schools."—*Manchester Courier.*

"The descriptions given are eminently intelligible, even to readers who are not versed in the technicalities of the subject."—*Aberdeen Free Press.*

"The author shows an enthusiastic interest in his subject. Those studying any department of railway engineering will find this book a reliable and suggestive guide."—*Glasgow Weekly Citizen.*

"A very excellent and valuable treatise, which should be in the possession of all railway engineers."—*Liverpool Journal of Commerce.*

"An admirable, highly interesting, attractive, and useful *Presentation Volume* for the young engineer."—*Glasgow Herald.*

"Not the smallest charm of the book is that, whilst the science of railway engineering is dealt with in a light and easy manner, the reader feels that he is being talked to of hard, solid facts by one who is a thorough master of his subject."—*Syren and Shipping.*

"Engineers, ironfounders, woodworkers—in fact everyone interested in railway construction and management—will here find a great deal of informing matter."—*Liverpool Daily Post.*

"In this handsome volume Mr. Haldane explains, carefully and minutely, how the stupendous and other works designed by engineers are carried out."—*The Shipping Telegraph.*

"Everything connected with railways is here brought under review, and described with abundance of knowledge and much literary skill, aided by the admirable plates which illustrate the book."—*Liverpool Daily Mercury.*

Demy 8vo, cloth, 554 pages, with many high-class Plates and other Illustrations. Price 15s.

STEAM SHIPS AND THEIR MACHINERY,

FROM FIRST TO LAST.

CONTENTS:

Chapter I.—Works and their Interiors.

Chapter II.—Machinery of the Works.

Chapter III.—Machinery of the Works—*continued.*

Chapter IV.—Openshaw Establishment of Sir Joseph Whitworth & Co.

Chapter V.—Boiler Works and System of Manufacture.

Chapter VI.—Manufacture of Steel for various Purposes.

Chapter VII.—Manufacture of Iron at the Dallam Forge, Warrington.

Chapter VIII.—The Fairfield Shipbuilding and Engineering Works, Glasgow.

Chapter IX.—Application of Machinery at the Fairfield and other Works.

Chapter X.—Shipyard Machinery—*continued.*

Chapter XI.—Wood-Working Machinery of Shipyards.

Chapter XII.—Atlas Works of Sir John Brown & Co., Sheffield.

Chapter XIII.—"The Eminent Engineer."

Chapter XIV.—Notes from a Modern Cargo Liner.

Chapter XV.—Commencing a New Engineering and Shipbuilding Establishment.

Chapter XVI.—Opening of the "Sirius Works."

Chapter XVII.—"Ships now Building"—Speed Calculations.

Chapter XVIII.—Initial Movements in the Drawing Office.

Chapter XIX.—Drawing Office Practice—*continued.*

Chapter XX.—Further Details of Engines.

Chapter XXI.—Minor Details of Marine Machinery.

Chapter XXII.—Details of Engines—*continued.*

Chapter XXIII.—Marine Boilers and their Design.

Chapter XXIV.—Marine Boilers—*continued.*

Chapter XXV.—The Screw Propeller—Pattern Shops—Foundries.

Chapter XXVI.—Machining and Erecting Shops.

Chapter XXVII.—Auxiliary Machinery of a Ship.

Chapter XXVIII.—Launching a Ship—Applications of Electricity.

Chapter XXIX.—A Gigantic Mail Liner on Long Voyage Station.

Chapter XXX.—General Remarks.

ABSTRACTS OF REVIEWS.

"Puts the student in possession of a vast experience without the trouble of a long apprenticeship."—*Rivista Marittima, Rome.*

"So full of interest, and the descriptions given so graphic and accurate, that your work has only to be known to be well appreciated."—*Managing Director, Sir John Brown & Co., Atlas Works, Sheffield.*

"Brevity and clearness of expression are outstanding features of the book. The whole volume contains much valuable information, not only for the marine engineer and shipbuilder, but for the public generally."—*The Steamship.*

"An invaluable work. The machinery and methods employed in shipbuilding are very lucidly treated, from the iron in its crude state to the completion of a first-class liner, including all its auxiliary machinery."—*Industries and Iron.*

"Mr. Haldane's statements are generally singularly accurate, and we can cordially recommend the book to our readers."—*Liverpool Journal of Commerce.*

"We have nothing but praise for this volume, which is very handsomely printed throughout. The illustrations are of the highest class."—*Machinery.*

"The simplicity of the work is a recommendation as great as its thoroughness, assisted by a magnificent array of plates and other illustrations."—*The Liverpool Courier.*

"The whole process of the building and manufacture of all that pertains to the modern steamship is presented to the reader in a simple, instructive, and very entertaining style."—*The Liverpool Shipping Telegraph.*

"It is a book of a class we are exceedingly glad to welcome."—*Machinery Market.*

"Will furnish many useful hints to those who engage in shipbuilding enterprise."—*Transport.*

"The volume is well got up, well illustrated, and well written, by one who in every line shows that he thoroughly understands and delights in the subject on which he writes."—*The Marine Engineer.*

"An interesting and instructive book for all wh are in any way connected, or intend to be, with steamships and their machinery."—*The Mechanical World.*

"Written in a clear and incisive style, and full of information from cover to cover."—*Shipping.*

"It may safely be affirmed that few scientific men could have produced anything so very well done."—*Glasgow Herald.*

"The author has written a popular work on a technical subject without omitting the details which are of most importance to the practical engineer."—*The Engineering Review.*

"The treatise should prove of particular value to students of naval architecture and marine engineering, besides being a handy text-book which should be in every public or private technical library."—*Invention.*

A much Improved and Enlarged Edition—now nearly exhausted,

Demy 8vo, cloth, 510 pages, with Twelve full page Plates.

Price 12s. 6d.

CIVIL AND MECHANICAL ENGINEERING.

ABSTRACTS OF REVIEWS.

"Mr. Haldane's intention has been to try to interest everyone in the science in which he is a practical proficient, and he has, on the whole, admirably carried out his conception."—*Saturday Review.*

"A work of great value which is written with conspicuous ability, and is rich in instructive and entertaining matter."—*Morning Post.*

"The volume is exceedingly interesting for the popular, as well as for the scientific world."—*Scientific American.*

"A welcome novelty in the field of engineering literature containing much useful information and sound advice pleasantly conveyed."—*American Engineering News.*

"This volume is of a kind which has not been written before, and is full of interesting and really useful bits of engineering experience that are not as a rule recorded."—*The Engineer.*

"In an open and unrestrained style, the author gives his reminiscences of engineering."—*Engineering.*

"Readers of all kinds will not lay down this book until they have read it through."—*Graphic.*

"As a work replete with interesting and serviceable information, clearly and pleasantly conveyed, it is practically unrivalled."—*British Jonrnal of Commerce.*

"A volume which teems with valuable—one might even say indispensable—information."—*Machinery and Iron and Steel Trades' Review.*

"Eminently practical and authoritative. Where the author acquired his scientific knowledge one may perceive, but where he gained his capital literary style is not so easy to determine."—*Glasgow Weekly Citizen.*

"Mr. Haldane's volume will convince the reader that no one could be more fitted to present in an attractive manner the different phases of engineering. His reminiscences of Messrs. Laird Brothers' Works are delightful reading."—*Journal of Commerce.*

"There is hardly a department of mechanical engineering the author is not practically acquainted with."—*Western Mail.*

"Should be in the library of every engineer and machinery user."—*Machinery Market.*

"The object of the author has been accomplished with a success which is only possible where a fluent style and graphic pen are combined with a thorough knowledge of details, and a wide personal experience."—*Leeds Mercury.*

Prospectuses of the books named, and also of the following lectures, may be had from the Author,

30 NORTH JOHN STREET, LIVERPOOL.

THE FOLLOWING POPULAR

LIMELIGHT LECTURES

BY THE AUTHOR

HAVE been much appreciated by large audiences, to whom they have been delivered in a free, simple, unwritten style. The Limelight Views are excellent, and represent the best and most interesting features of their respective subjects, special information for which has been obtained from many authoritative sources

"Origin and Development of Steam Navigation."

PART I.—Earlier Systems of Water Transport—First Experiment in Steam Navigation, 1788—*Comet*, 1812—Pioneer Steamer to India, 1825—*True* origin of Atlantic Steam Navigation—Origin of the Cunard Line—Its early Ships—From Paddle to Twin Screw Propulsion—Building, Launching, and Equipment of an Ocean Racer.

PART II.—First White Star Steamer—A New Departure—The new R.M.S. *Oceanic*—Interior and Exterior Views, &c.—Accelerated Speed of Ships since 1840—Flag Signalling—Ship Controlling Appliances—Naval Ships, Past and Present—Ocean Perils—What Steam Navigation has accomplished—Its Future.

"The lecture, which was given last evening to a very large audience, was at once highly interesting and informing."—*Liverpool Daily Post.*

"Mr. HALDANE touched in his lecture upon the earliest systems of water transport down to the *Comet* of 1812, and onwards to the *Sirius* and *Great Western* of 1838, which were all commented upon in humorous and happy style. He next, with the aid of a choice collection of lantern slides, described the various peculiarities of some of the finest ships, and then passed on to those of the navy, thus ending a lecture which, from first to last, proved most interesting to a large and appreciative audience."—*Liverpool Shipping Telegraph.*

"Touching in a most interesting manner upon various early steamers, the lecturer next traced the origin and development of the Cunard and other famous Companies to the present. Various types of war vessels were then described, a series of limelight views of the numerous points of interest in the lecture greatly enhancing its pleasure."—*Journal of Commerce.*

"The lecture was delivered to a crowded audience in the Free Library Lecture Hall, the 'Origin and Development of Steam Navigation' to the present, being very interestingly treated."—*Oldham Chronicle.*

"Life at Sea in a Peninsular and Oriental Mail Liner."

PART I.—Miller's Experimental Steamboat—First Steamer on the Clyde—Coasting Steamers—London to Calcutta by Steam, 1825—Origin of the Peninsular Company, 1835—P. and O. Company, 1837—Its Difficulties and Development—Extensions in the East.

PART II.—Plan of Routes—Departure from London—At Sea—Board Ship Hints—Bay of Biscay Incidents—Arrival at Gibraltar—Mediterranean Points of Call—Passengers' Amusements and Occupations—Suez Canal Passage—Red Sea—Indian Ocean Incidents—Interesting Points of Arrival—The Fleet of To-day.

"Nothing, perhaps, can give a better idea of modern ocean travelling than an address by one who is thoroughly conversant with the practical methods adopted for securing the highest results. With the object of putting these clearly before his audience, Mr. HALDANE described the origin of the Peninsular and Oriental Co., and its subsequent development in India, China, and Australia. He then proceeded to illustrate, by means of beautiful slides, the various social aspects of life at sea, and the various points of call. etc., on a voyage to Australia, all of which were pleasantly and humorously commented upon.

"Other interesting particulars completed a lecture which, throughout, gave great satisfaction to a large and very appreciative audience."—*Liverpool Journal of Commerce.*

"Mr. HALDANE humorously described his own experiences of a voyage from Sydney to London, many years ago, as a contrast to the present style of ocean travelling, and then exhibited, by means of admirable slides, the social characteristics of life at sea. Other interesting notes ended a lecture which, from first to last, proved most attractive."—*Liverpool Shipping Telegraph.*

"Last evening a very enjoyable lecture was given on 'Life at Sea in a P. and O. Mail Liner.' The lecturer's remarks were freely illustrated by limelight views, and, altogether, the address proved both instructive and interesting."—*Liverpool Daily Post.*

"A most interesting, amusing, and instructive lecture."— *Salford Chronicle.*

"Ocean Bed Scenery."

PART I.—Distribution of the Seas—British Submerged Plateau—The 100 Fathom Line — Atlantic Basin — Early Hydrographical Surveys—Mysterious Soundings—50,000 Fathoms and *No Bottom!*—H.M.S. *Challenger* Expedition — Discoveries—Ocean Chasms—Their Causes—Results of the Voyage—Latest Submarine Surveys—Points of Call.

PART II.—*A Unique Expedition*—Ocean Bed laid dry—On the British Plateau—Crest of the Channel Mountains—Descent upon the Atlantic Plains—Westward Ho!—Over Hill and Dale—Strange Discoveries—Great West Indian Depressions—Vast Central Plateau of Atlantic Bed—The Magellan Valley—Westward to the Far East—Himalayas of the Pacific—Volcanic Territory—Wondrous Scenes—The Sea as it was—Homeward Bound.

"Mr. HALDANE proceeded along the track of H.M.S. *Challenger*, whilst describing the discoveries of that expedition, and also those of the latest ones. He then requested his audience to imagine that the ocean was dried up, and proposed a trip along its bed to admire the wonders there to be found. The lecture was listened to with keen interest."— *Journal of Commerce.*

"Mr. J. W. C. HALDANE'S popular lecture on 'Ocean Bed Scenery' was given with quiet humour and in an easy conversational style, the interest being accentuated by the aid of a series of lantern slides."— *Shipping Telegraph.*

"The lecturer included in his remarks much of a very interesting and instructive nature regarding the peculiarities of the sea bed. He also explained and illustrated the interior working of volcanoes, and their extraordinary action upon the ocean floor, as well as upon coast lines. The lecture gave great satisfaction to a crowded audience."—*Liverpool Mercury.*

"3,800 miles from East to West on British Soil."

PRESS NOTICES.

"The Royal Technical Institute was crowded on the occasion of a lecture on Canadian Scenery and Incidents, by Mr. J. W. C. HALDANE, C.E., who has lectured here on several occasions, and appears to possess an inexhaustible fund of information. His extemporaneous remarks gained additional interest from the succession of views which illustrated the boundless resources of the Dominion for trade and commerce; its unparalleled field for the industrious and enterprising; its travelling facilities; its people; its scenery; its splendid engineering features; and many other points of interest. The lecturer showed his audience that Canada was a country of enormous resources. Everything seemed to flourish there."—*The Salford Reporter.*

"The lecture was illustrated by means of numerous beautiful limelight views, and proved highly interesting and instructive to a large audience."—*Weekly News, Colwyn Bay.*

"Last evening a lecture was given under the title of *3,800 Miles from East to West on British Soil*, by Mr. J. W. C. HALDANE, who has recently returned from an extensive tour through Canada, under the kind auspices of various leading people.

"Interesting references were made to his experiences during a run by the Canadian Pacific Railway from Montreal to Vancouver, and afterwards to Victoria, B. C., stopping, for various periods, at places of special interest. An amusing description was also given of his ride through the Rockies on the cow-catcher of a locomotive. These were all commented upon in a happy, humorous, and conversational style, and, as many of the most noteworthy parts of Canada were illustrated by means of beautiful limelight views, the lecture proved most attractive."—*Liverpool Journal of Commerce.*

"A capital limelight lecture by Mr. HALDANE, who took his audience right across the Canadian Continent, and in a chatty and semi-humorous way conveyed a vast amount of useful information. The lecture lasted over two hours, but the time seemed to fly. Some magnificent views were shown."—*Liverpool Courier.*

"Origin and Development of the Railway System."

PART I.—First Iron Tram Roads of 1760—Trevithick's first Locomotive — His *earliest* Locomotive Line — George Stephenson — His Locomotive Tram lines in the Coal District—Stockton and Darlington Railway of 1825—Origin of the Liverpool and Manchester Railway—Its prodigious Success—Railway Mania of 1845—Rapid extension of the Railway System — Portable Light Railways — Narrow Gauge Lines — Railway Travelling Past and Present — Wondrous Improvements — How accomplished.

PART II.—Railway Mechanical Engineering—Crewe Works of the London and North Western Railway—Oil Fuel in Locomotives—Civil Engineering of Railways—Tunnels, Cuttings, Embankments, Bridges—Permanent Way and its Connections—Methods of Construction—Disastrous Failures—Mr. Brassey as a Contractor on a gigantic scale—Accidents and their Lessons—How a Railway is kept in safe Working Order—Effect of Snow Storms—Road Locomotive transit.

PART III. — The Railway Systems of the United States and Canada — Extraordinary Specimens of Mountain Engineering — Corkscrew Tunnelling—Mountain Rack Railways — Jungfrau Electric Rack Railway—Highest Railway in the world—Electrical Traction—Aerial Rope Railways in the Pyrenees, etc.—Unique Examples—Concluding remarks.

3 2044 050 684 34

This book should be returned to the Library on or before the last date stamped below.

A fine of five cents a day is incurred by retaining it beyond the specified time.

Please return promptly.